



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN – 05

Ref: PSER:SCT:KGN-C2094:TCN-05

Date: 12-02-2021

Sub	Tender Change Notice (TCN) - 05.	
Job	CIVIL, STRUCTURAL & ARCHITECTURAL WORKS (INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.	
Ref	1.0	Tender no PSER:SCT:KGN-C2094:21.
	2.0	BHEL's NIT, vide reference no PSER:SCT:KGN-C2094:8405 Date: 20-01-2021.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:KGN-C2094:TCN-01, dated 03-02-2021.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:KGN-C2094:TCN-02, dated 06-02-2021.
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:KGN-C2094:TCN-03, dated 11-02-2021.
	6.0	BHEL's TCN-04, vide reference no PSER:SCT:KGN-C2094:TCN-04, dated 12-02-2021.
	7.0	All other pertinent issues till date.

With reference to above, following points/ documents, relevant to tender, may please be noted and complied with while submitting offer.

- 1.0 Clarifications to bidder's query is attached vide Annexure-A to this TCN-05.
- 2.0 Revised BOQ cum Price Schedule, **VOLUME-III-PRICE SCHEDULE-REV-01** is attached superseding **VOLUME-III-PRICE SCHEDULE-REV-00** issued earlier along with NIT. **Bidders shall quote as per this revised Volume-III, Rev-01 only.** Bidders are also requested to submit a declaration in techno-commercial offer that they have submitted their price bid as per **REVISED Price Schedule** format.
- 3.0 Revised 'No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.
- 4.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

DY. MGR (SCT)

Encl: As above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

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ANNEXURE-A TO TCN-05				
JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS (INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.				
TENDER NO - PSER:SCT:KGN-C2094:21				
CLARIFICATION OF BIDDER'S QUERY				
Sl. No.	Reference clause of tender document	Existing Provision	Bidder's Query	BHEL's Clarification
1	Item No A111 of SCH-2: PRICE BREAK-UP of VOLUME-III PRICE SCHEDULE, REV-00	Supplying and filling sand upto any depth under floors, around foundations, plinths, paving, passages, 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. Qty Cum. WEIGHTAGE	You are requested to please review weightage	Bidders are requested to refer Revised Price Schedule, Rev-01 attached with this TCN.

VOLUME-III PRICE SCHEDULE, REV-01	
JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.	
TENDER NO.- PSER:SCT:KGN-C2094:21	
Sl. No.	PREAMBLE
1	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully before filling in rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender and other tender sections as applicable and shall have precedence over any contrary statement mentioned any where in this document.
2	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions. Drawings enclosed with the tender are only preliminary and for tender purposes and giving some idea of the work involved. The work is to be executed as per drawings & documents, which shall be furnished during execution.
3	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the complete tender document and this schedule.
5	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains, within plus minus fifteen percent ($\pm 15\%$) of the awarded price as per LOI.
6	Prior written approval of BHEL shall be sought by the contractor in case quantity variation of any item crosses +50% (plus fifty percent) limit during execution, an approval to be obtained before execution of further quantity for this item.
7	In case Sealed /Paper Price Bids are opened for finalisation of the tender, for any Item Rate/BOQ based contract, possibility of variation of quantity/ addition/deletion of items can not be ruled out. Under such circumstances, after execution of work, if it is observed that standing as L-1 is changed based on actual quantity executed, the bidder shall give suitable rebate to maintain your standing as L-1. Since this aspect can be assessed at the end of execution, necessary adjustment will be effected at the end of execution in final bill. This condition shall not be applicable where the tender is finalised through Reverse Auction.
8	BHEL reserve the right to rationalize the rates, quoted by L-1 bidder against unit rate items and/ or other optional items with respect to item-wise lowest rates (amongst the participating bidders), before placement of order.
9	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing , clearing of old structures and leveling etc. including fixing of grid pillars, benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same. However, if separate rate for such item is available in the rate schedule, the same shall be considered.
10	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
11	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted as per BHEL approved payment schedule/billing break-up.
12	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
13	No splitting of the job is envisaged. Decision of BHEL in this regard shall be final and binding to the bidders.
14	Bidders are not allowed to alter the Price Schedule format including item description, quantity etc. and the offer is liable for rejection if the bidders submit their prices in Price Schedules modified by them. BHEL reserves the right to reject the offers of bidders who submit offers in Price Formats which are modified/altered by them. Also putting any comments instead of rates/price in the designated column of the rate schedule shall make the offer liable for rejection.
15	Bidders to note that for Civil &/Structural packages, against a particular item against a ST No. appearing in more than one schedule of the BOQ, same rate must be quoted in all schedules for that particular items with same descriptions. If by error, different rates are quoted in different schedules for same ST No.(i.e. item with same description), then the higher of the rates shall be considered for evaluation but awarding shall be done with the lower rate, if the bidder becomes L-1."
16	For Lumpsum Service Contract : The items/components indicated in the tender is indicative and may vary to any extent. No compensation shall be payable in case of any variation in the items/components listed in the bill of quantities if the executed weight remains within the variation limit. However, in case of deletion of any item or addition of new items over and above the items listed or variation of existing quantity beyond variation limit specified, adjustment (i.e. Payment or recovery as the case may be) shall be done on pro-rata basis based on the Rate per MT worked out from the quoted lump-sum Price and the total weight of components listed /indicated in price schedule plus 15% weight variation limit.
17	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.
18	In case of tender for Civil and/or Structural works, if the Non-schedule items are not quoted by the bidder, it will be treated at par with rate of corresponding item of CPWD/PWD/DSR schedule as prescribed in the tender/BOQ cum Rate Schedule.
19	No interest, whatsoever, shall be payable by BHEL on the security deposit, any bank guarantee submitted or any amount due to successful bidder/contractor.
20	Size and weights of various items are mentioned in the attached BOQ cum rate/price schedule for reference purpose only & these shall not be taken into consideration for quoting/calculating amount in the rate schedule. These shall be utilised as per relevant sections of tender. Bidders shall quote for each item in the rate column, taking unit as mentioned in the quantity column. Rates shall be filled in both figures and words. Amount shall be calculated based upon these rates multiplied by the mentioned quantity for the respective items.
21	Bidder's Total price shall be considered for evaluation unless stated otherwise.
22	In case of BOP packages, if Bidder does not quote/indicate the price for freight chages against indicated rate schedule, the same shall be considered as 2% of basic price and adjusted with the total quoted price against each item keeping the total quoted price unaltered.

VOLUME-III PRICE SCHEDULE, REV-01			
JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.			
TENDER NO.- PSER:SCT:KGN-C2094:21			
SCH-1 : TOTAL PRICE			
SL NO	DESCRIPTION	PRICE SCHEDULE REF	TOTAL QUOTED PRICE (IN INR)
1.0	TOTAL PRICE FOR CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I KAHALGAON STPP, BIHAR AS PER TENDER SPECIFICATION.	SCH 2 - BREAK UP OF TOTAL PRICE	<u>IN FIGURES:-</u>
			<u>IN WORDS:-</u>
NOTE			
1.0	The Price bid contains the consolidated list of BOQ with brief description of items. The quantity indicated in the BOQ / Price bid is approximate only and is liable for variation. Payment will be as per actual quantity executed as certified by BHEL Engineer.		
2.0	Before filling the Rates in the Price bid, the bidder shall go through the detailed specification of all items of BOQ as well as Scope of Work as specified in relevant Clause of this document		
6.0	Bidders shall quote 'Total Amount' in the format for Price Bid available in the e procurement portal.Any other entry elsewhere in the price bid shall be treated as Null and Void.		
7.0	The above mentioned 'Total amount' is for the entire Bill of Quantity (BOQ).		
8.0	BHEL has pre-fixed the weightages for the amount of individual items at SCH-2 of Bill of Quantity with respect to the 'Total Amount' at SCH-1		
9.0	Based on the itemwise percentage allocations, the amount for the individual items of the Bill of Quantity shall be arrived at. The rates of individual items shall be derived from the amount against each items and its quantity after rounding off to upto 6 decimal places. However, RA bill payment shall be done after rounding off the gross amount to two decimal points. Any adjustment, if required, due to such methodology, will be effected / adjusted in final bill.		
10.0	Any item as per scope of work, if not included in the price quoted above and shown separately will not be taken cognizance of and the offer shall be liable for rejection.		
11.0	Price format shall not be changed by bidder in any case and it may lead to cancellation of their offer.		
12.0	Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per SI No.9 above		

<p style="text-align: center;">VOLUME-III PRICE SCHEDULE, REV-01</p>				
<p style="text-align: center;">JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.</p>				
<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
100	EARTH WORK			
	Earth work: Earth work In excavation, backfilling and disposal including necessary men/women, materials, equipment, loading, transportation, unloading, dewatering etc as per specification, drawing and as directed by engineer- in-charge for the following:			
101	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), shoring & strutting, 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.[Measurement of excavation shall be paid as per actual quantity at site and as per clause 5.2.0 of Technical Specification, Section D, Sub-Section D1 OF VOL-II B)			
a	Depth from ground level but not exceeding 2 m	CUM	48837	0.00404720
b	Depth exceeding 2 m but not exceeding 4 m	CUM	14105	0.00146376
c	Depth exceeding 4 m but not exceeding 6 m	CUM	1538	0.00019980
d	Depth exceeding 6 m but not exceeding 8 m	CUM	100	0.00001628
e	Depth exceeding 8 m but not exceeding 10 m	CUM	100	0.00001956
A101	Extra over item no 101 for providing and installing special kind of shoring and strutting with temporary removable earth retaining structure using steel I/H sections with waler beam arrangement, including, design, necessary MS clamp, anchors (if required) etc for earth protection during excavation/concreting around foundation and demobilizing the same after completion of work for excavation up to following depth below ground level at specified locations and side as per drawing. (The design and scheme of earth retaining structure shall be submitted to BHEL for approval prior to construction. The design should take care of earth pressure due to overburden, surcharge due to adjacent structure/ facilities, earth moving machinery etc.). Mode of measurement: Area shall be the exposed structural shoring arrangement between ground level and bottom of excavation.			
a	Depth from ground level but not exceeding 4 m	SQM	351	0.00309068
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 300 mm 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.[Measurement of Backfilling shall be paid as per excavation quantity after deduction for concrete etc.]			
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	48064	0.00241141
109	Extra over ST No. 101 and A107 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.			
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	25601	0.00013379
A111	Supplying and filling sand upto any depth under floors, around foundations, plinths, paving, passages, 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	196	0.00037388
A114	Earth work in stripping of top soil upto a minimum depth of 0.30 m below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300mm including roots and organic materials etc for leveling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means, disposal of stripped materials within a lead upto 1km etc all complete as per specification, drawing and as directed by the engineer-in-charge.	SQM	17500	0.00024824
200	CONCRETE WORKS			
	CONCRETE WORK: Providing and placing concrete work including cost of labour, materials (unless otherwise specified in BOQ/contract specification) and equipment for handling, transportation, batching, mixing, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following: (Cement shall be supplied by BHEL free of cost for incorporation in permanent work.)			
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, at any depth below finished floor level etc.	CUM	3008	0.01136572
202	Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc	CUM	53	0.00020026
203	Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc	CUM	50	0.00018892
A204	Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 12 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete.	CUM	98	0.00035244
205	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure , grade slab, paving, drains, under floors etc at all level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.			
a	M 25 Grade	CUM	18778	0.07197604
b	M 30 Grade	CUM	25	0.00009622
Ac	M 35 Grade	CUM	413	0.00159567

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<p style="text-align: center;">JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.</p>				
<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
206	Providing and laying Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at all level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.			
a	M25 Grade	CUM	4338	0.01660164
b	M 30 Grade	CUM	35	0.00013449
c	M 35 Grade	CUM	40	0.00015431
A207	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, Booster fans, Ball mills, etc. 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			
a	M 30 Grade	CUM	2299	0.00922743
208	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, embedments and temperature control of concrete. Payment terms - a) After casting 75% ; b) After receipt of ultrasonic test report - 25%.			
b	M 35 Grade	CUM	100	0.00053344
A209	Extra over St. No. 205 to A207 for controlling of temperature of fresh concrete to less than 23 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	1600	0.00152902
A210	Extra over ST Nos. 205 to A207 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	2299	0.00099724
211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. (Payment of welded wire mesh, chicken wire mesh shall be made separately)			
a	M20 grade	CUM	36	0.00013603
b	M25 grade	CUM	285	0.00107687
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 any level or thickness, drains etc complete as per following.			
a	1:2:4 (1 part cement, 2 part sand, 4 parts of aggregate by volume) (M15)	CUM	160	0.00060456
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.			
a	M 25 grade	CUM	33	0.00018550
b	M 30 grade	CUM	163	0.00091879
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	M 30 grade	CUM	655	0.00312580
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	50	0.00002845
b	Reinforced cement concrete of all grades	CUM	73	0.00006284
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	60	0.00000305

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<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
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	23	0.00000009
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	23	0.00000436
219	Providing and applying curing compound (water based) of approved make where ever required as per manufacturer's specification.	SQM	48	0.00000387
223	Cutting of existing concrete/ RCC slab (total thickness upto 250mm including floor finish & 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	10	0.00001513
300	FORM WORKS			
	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:			
301	Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.including chamfering of edges as per drawing, specification and instruction of engineer in charge..	SQM	34892	0.01406703
302	Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing.for all heights as per specification, drawing and instruction of engineer in charge.	SQM	17737	0.00862073
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	105	0.00002093
b	Pockets of depths more than 150mm and upto 300 mm depth	EACH	105	0.00003700
c	Pockets of depths more than 300mm and upto 600 mm depth	EACH	105	0.00006851
d	Pockets of depths more than 600mm and upto 1000 mm depth	EACH	15	0.00001566
e	Pockets of depths more than 1000mm and upto 1500 mm depth	EACH	5	0.00000763
f	Pockets of depths more than 1500mm and upto 2000 mm depth	EACH	5	0.00001011
400	REINFORCEMENT			
	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.	MT	6	0.00036920
402	Providing, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of high yield strength deformed TMT steel bars of grade Fe-500 having minimum elongation of 14.5 % or Fe-500D conforming to IS:1786 including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. Payment terms - Supply - 75%,Cutting, bending & fixing - 25%	MT	30	0.00140241
A402	Providing, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of high yield strength deformed TMT steel bars of grade Fe-500 having minimum elongation of 14.5 % or Fe-500D conforming to IS:1786 including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. Reinforcement steel shall be supplied by BHEL free of cost for incorporation in permanent works	MT	5897	0.04678253
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. 402, 403, 405 as applicable.			
a	12mm Reinforcement bar	Nos.	25	0.00000728
b	16mm Reinforcement bar	Nos.	25	0.00001150
c	20mm Reinforcement bar	Nos.	25	0.00001622
406	Supply and fixing reinforcement bar couplers (of approved manufacturer's as per the relevant IS code) in position for steel reinforcements of TMT steel of grade Fe-500D or 500EQR conforming to IS:1786 including , labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer. (Agency has to supply reinforcement bar couplers).			
a	12mm dia	Nos.	4	0.00000023
b	16mm dia	Nos.	4	0.00000029
c	20mm dia	Nos.	4	0.00000036
d	25mm dia	Nos.	4	0.00000046
e	28mm dia	Nos.	4	0.00000079
f	32mm dia	Nos.	4	0.00000084

VOLUME-III PRICE SCHEDULE, REV-01				
JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.				
TENDER NO.- PSER:SCT:KGN-C2094:21				
SCH-2 : PRICE BREAK-UP				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
500	WATER PROOFING WORKS			
	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 for the following:(Cement shall be provided by BHEL free of cost.)			
501	Providing and laying underbed grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 25 mm including preparation of surface, batching, mixing, leveling etc. all complete.	SQM	35	0.00000368
A502	Providing and laying topping plaster with cement mortar 1:4 (1 cement : 4 sand) and thickness of 25 mm including preparation of surface, batching, mixing, leveling etc. all complete.	SQM	2480	0.00026107
A506	Providing and applying PU based water proofing treatment with one coat of polymerised mastic over the RCC roof to achieve smooth surface as primer with an application rate of minimum 6 sq.m per litre and two successive liquid coatings of high solids content urethane pre-polymers or equivalent material based finish coats as per relevant IS/ASTM standards(ASTM C 836 and ASTM C 898), to form an elastomeric membrane with overall dry film thickness 1.5 mm subject to minimum 500 gm/sqm/coat application rate. Item includes surface preparation, polyscrim cloth /fabric, polymerised mortar base preparation, etc all complete as per specifications and directions of engineer in charge.	SQM	3740	0.00393987
507	Providing and laying wearing course consisting of 25mm thick plain cement concrete of grade M15 (1:2:4) with graded aggregate of 12.5mm size cast in panels of maximum size 1.2mx1.2m and reinforced with 0.56 mm dia. galvanised chicken wire mesh and sealing of joints (in grooves of 6mm X 6mm) using silicon /elastomeric compound etc all complete.	SQM	3840	0.00267769
510	Providing and laying cement concrete chequered flooring tiles of 22 mm thickness and size 300x300 mm conforming to IS 13801 with 8 mm thick 1:4 cement mortar over the top most layer of roofing treatment in pathway or entire area with fine joints including sealing of joints (silicon/elastomeric sealant) and providing expansion gap in both directions filled up with (silicon/elastomeric) joint sealant, underbed(as per drawings) etc all complete. (Water proofing paid elsewhere)(including cost of cement for tiles making)	SQM	1376	0.00073042
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	6919	0.00100730
A511	Providing and applying three 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	27253	0.00596163
513	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	KG	155	0.00001157
A518	Providing and applying waterproofing treatment (two component transparent polyamide cured epoxy sealer coating, having solid by volume minimum 40%± 2%, of minimum 50 micron DFT & sealer coat shall be followed with the application of epoxy phenolic coating, solid by volume minimum 63%, of minimum 400 micron DFT for the concrete surfaces of underground water retaining structure including surface preparation etc. all complete as per specification.	SQM	403	0.00002841
A519	Providing and applying waterproofing treatment with minimum 400 micron food grade epoxy coating complying to FDA title 21, Part 175.300 for the internal concrete surfaces of water retaining structure including surface preparation etc. all complete as per specification.	SQM	13	0.00000427
A520	Providing and fixing lining on internal surfaces of sumps with replaceable chlorobuty/bromobutyl rubber lining of minimum 5 mm thickness or with vinly ester based flake glass lining of minimum 3 mm thickness etc. all complete as per specification.	SQM	403	0.00091384
A521	Providing and fixing acrylic based polymer modified cementitious composite coating system etc. all complete as per specification.	SQM	5	0.00000191
A522	Providing and fixing minimum two coats acrylic based polymer modified cementitious composite coating system including mixing of fine silica/quartz sand of 0.6 mm nominal size for better abrasion resistance and total nominal thickness of such coating shall be minimum 1.5 mm etc. all complete as per specification.	SQM	5	0.00000191
B522	Providing and fixing waterproofing treatment to be provided on sunken portion of all vertical and horizontal surfaces of depressed portions of false floor, toilets, W.C., kitchen, Pantry and the like consisting of : (i) Ist course of applying cement slurry @ 4.4 kg/sq.m mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface. (ii) IInd course of 20 mm cement plaster 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface. (iii) IIIrd course of applying blown or residual bitumen applied hot at 1.7 kg. per sq.m of area. (iv) IVth course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 kg/sq.m) etc. all complete.	SQM	40	0.00001488
600	JOINTS AND FILLERS			
	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 for the following:			
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.			
a	12 mm wide joints.	SQM	52	0.00002174
b	20 mm wide joints.	SQM	52	0.00002721
c	25 mm wide joints	SQM	327	0.00025805
d	50 mm wide joints	SQM	287	0.00045297
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:			

VOLUME-III PRICE SCHEDULE, REV-01				
JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.				
TENDER NO.- PSER:SCT:KGN-C2094:21				
SCH-2 : PRICE BREAK-UP				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
a	25mmX25mm	RM	35	0.00001557
b	50mmX25mm	RM	942	0.00080597
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	984	0.00004408
b	12mm X 25mm	RM	35	0.00000136
c	20mmX25mm	RM	1080	0.00005564
605	Supplying and installation of commercial quality of expanded polystyrene products from reliable manufacturers as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.			
Ae	100 mm wide joints with polystyrene board of type-I conforming to IS: 4671 with density 20 Kg/cum	SQM	362	0.00010162
606	Providing and installing PVC joint sealing strips of minimum 3mm thickness and minimum width 100 mm at the construction, expansion and isolation joints from reputed manufacturers as a continuous diaphragm to contain the filler material and/ or to exclude passage of water or any other material into or out of the structure, without any longitudinal joint; and shall be procured and installed in largest practicable lengths having a minimum number of transverse joints with jointing procedure as per the manufacturer's recommendations including the material and tools required for jointing, testing, protection, etc all complete. The joints in rubber seals shall be vulcanised as needed.	RM	33	0.00000572
607	Providing and installing strong and tough alkathene sheet or equivalent of about 1 mm in thickness in isolation joints and shall be fixed by an approved adhesive compound on the cleaned surface of the already set concrete as per the manufacturer's recommendations, to cover it fully including the material and tools required for jointing, testing, protection, etc all complete.	SQM	8	0.00000155
608	Supplying and filling in position hot applied bitumin sealing compound (Grade B) 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	5	0.00000022
b	12mm X 25mm	RM	5	0.00000019
c	20mmX25mm	RM	5	0.00000026
609	Providing and sealing of joints with premium grade silicon sealant (Silpruf of GE silicon or approved equivalent) including cleaning of joints, raking out groove, joint filler tapes, application of primer, curing, scaffolding etc. all complete as per manufacturer's recommendation for following size groove:			
a	25mmX25mm	RM	5	0.00000128
b	50mmX25mm	RM	5	0.00000238
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	335	0.00006153
612	Providing and applying approved fire retardant sealant in joints/openings including cleaning of joints/openings, raking out groove, application of primer, scaffolding etc. all complete.			
a	25mmX25mm	RM	5	0.00000615
b	50mmX25mm	RM	5	0.00001213
613	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	5	0.00000144
614	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	5	0.00000288
615	Providing and fixing 300 mm wide Stainless steel strips over expansion joints with minimum lap of 50mm length including stainless steel screws, rawl plugs etc. all complete.	Kg	10	0.00000722
700	MS EMBEDMENTS			
	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 for the following:			
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. Payment: Supply 70%, fixing 30%	MT	8	0.00054100
A701	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, manual Cleaning and providing with Primer Coat of Chlorinated Rubber based Zinc Phosphate Primer of Minimum 50 Micron Dry Film Thickness (DFT). etc. all complete. Payment - supply 70%, fixing 30%	MT	21	0.00149113
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 - supply 65%, fixing 35%	MT	10	0.00079945
A703	Same as above items 701, A701 & 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	4	0.00005768
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	4	0.00005858

<p style="text-align: center;">VOLUME-III PRICE SCHEDULE, REV-01</p>				
<p style="text-align: center;">JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.</p>				
<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
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	105	0.00000753
b	PVC pipes / conduits of all diameters	Kg	150	0.00003057
c	UPVC pipes / conduits of all diameters	Kg	100	0.00003367
d	Expansion anchor fasteners (galvanised) of HILTI make(HUD-1 Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:			
i	8mm Dia	EACH	10	0.00000025
ii	10mm Dia	EACH	10	0.00000031
iii	12mm Dia	EACH	10	0.00000037
iv	14mm Dia	EACH	10	0.00000054
e	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:			
i	HST M8	EACH	10	0.00000109
ii	HST M10	EACH	10	0.00000160
iii	HST M12	EACH	10	0.00000243
iv	HST M16	EACH	15	0.00000672
v	HST M20	EACH	15	0.00001353
vi	HST M24	EACH	15	0.00002496
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	EACH	10	0.00000184
ii	HAS-E5.8 M10	EACH	10	0.00000217
iii	HAS-E5.8 M12	EACH	10	0.00000258
iv	HAS-E5.8 M16	EACH	15	0.00000646
v	HAS-E5.8 M20	EACH	15	0.00001157
vi	HAS-E5.8 M24	EACH	15	0.00001613
705	Placing, locking and releasing of Vibration Isolation spring modules over the foundation at all elevations including providing all assistance under the supervision of the supplier, transportation from BHEL store, necessary staging, platforms, leveling, alignment etc. all complete.	Nos	20	0.00001995
706	Supply and installation of approved 25mm thick vibration damping resilient pads on/around foundation of vibrating equipment and at other locations all complete.	SQM	13	0.00002019
707	Providing, laying and fixing rails(52kg/m) and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete. Payment: supply 70%, fixing 30%	MT	4	0.00035786
800	GROUTING			
	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 for the following (Cement shall be provided by BHEL free of cost):			
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	3	0.00000127
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	1	0.00001353
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	26	0.00036554
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 Conbextra GP-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	21	0.00065857
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	32	0.00113088
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	3	0.00000251
807	Providing on the outer surface of walls, frames, rafts and roof slabs coming in contact with earth. Polymer modified cementitious coating in two layers as specified and as per manufacturer's specifications shall be provided directly on the concrete surface : 50 mm thick P. C. C. (1 : 2 : 4 with 10 mm nominal size stone aggregates) shall be provided under the raft i.e. over the lean concrete, followed by polymer modified cementitious coating in two layers (slurry mix application) as per manufacturer's specification. 50 mm thick P. C. C. (1 : 2 : 4) with 10 mm nominal size stone aggregates shall then be laid over the polymer modified cementitious coating before laying the raft.	SQM	333	0.00019332

VOLUME-III PRICE SCHEDULE, REV-01				
JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.				
TENDER NO.- PSER:SCT:KGN-C2094:21				
SCH-2 : PRICE BREAK-UP				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
808	Providing Chemical Injection Grouting with Minimum, 12 mm dia (NB) threaded nozzle of suitable length over the surface and along the construction joint line in a grid pattern at a spacing not exceeding 1.5m c/c before concreting operation After the nozzles are fully set, neat cement slurry admixed with water soluble non-shrink polymer / monomer based chemical shall be injected through the net - work of nozzles with low pressure grout pumps at a pressure of about 2.0 Kg/Sqcm. Cement slurry shall be prepared by mixing cement with non-shrink polymer/monomer @ 500 gm/50 kg bag of cement and water, ensuring that Water: Cement ratio does not exceed 2 (by weight). Wetter the structure, lesser should be the water cement ratio. The property of the polymer/monomer should be such that when it is mixed with water @ 0.5% by weight of water, the viscosity of the resultant solution (water and polymer/monomer) should not be more than 1.2 centipoises. Plasticizing agent shall be added wherever required. The grouting shall be started at very low pressure and increased gradually to a required pressure. The grouting shall continue, till the hole refuses to take any further grout, even at an increased pressure. Applied pressure shall not be more than the designed strength of the concrete. After completion of grouting operation, the nozzles shall be sealed properly to the satisfaction of the Engineer	SQM	318	0.00008783
900	DOORS, WINDOWS, VENTILATORS, LOUVERS			
	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 for the following:			
A903	Providing, fitting and fixing factory made pre-laminated solid core flush door shutter as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, partial 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) Payment: supply 70%, fixing 30%	SQM	10	0.00005619
A904	Providing and fixing single or double steel door shutters with 45mm thk flush design shutter comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete. Side , top and bottom edges of shutters shall be reinforced by continuous pressed steel channel with minimum 18G. Payment: supply 70%, fixing 30%	SQM	110	0.00093721
A907	Providing and fixing fire proof steel doors (single or double shutter) with panic devices shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers including all fittings, vision panel of minimum 11mm thick inter layered fire resistant glass , shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs. Payment: supply 70%, fixing 30%	SQM	45	0.00040130
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: supply 70%, fixing 30%			
a	Openable type	SQM	558	0.00127187
b	fixed type	SQM	248	0.00037846
A909	Providing and fixing anodised aluminium work of INDAL, Jindal, Hindalco or other equivalent approved make for door shutter (single or double), 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, 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 working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid separately). Weight of aluminium section only shall be measured. Payment: supply 70%, fixing 30%	Kg	10604	0.00601681
911	Providing and fixing of door closers as per specification ,of approved make & quality all complete of following type :			
a	Over head hydraulic door closures as per IS 3564	EACH	5	0.00000636
b	Floor mounted Hydraulic door closers as per IS 6315	EACH	5	0.00001576
912	Providing and fixing pressed steel frames fabricated from 16 gauge M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars ,paintings etc all complete as per specifications. Payment: supply 70%, fixing 30%	Kg	424	0.00005318

<p style="text-align: center;">VOLUME-III PRICE SCHEDULE, REV-01</p>				
<p style="text-align: center;">JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.</p>				
<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
913	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per IS 6248 and specification of approved make of following types: The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.(partly coiled and lath/full lath). Payment: supply 70%, fixing 30%			
b	Mechanically Operated	SQM	18	0.00013785
c	Electrically operated	SQM	125	0.00106053
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.			
Aa	6 mm thick ground glass	SQM	50	0.00008769
Ad	6 mm thick laminated glass	SQM	50	0.00020878
Ae	3mm thick Polycarbonate sheet fire retardant and ultra violet resistant	SQM	60	0.00004966
Ag	6 mm thick clear toughened glass	SQM	832	0.00172684
Ah	8 mm thick clear toughened glass	SQM	50	0.00013838
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	5	0.00001513
Ai	Composite double glazing of 24mm thick consisting of 6mm thick clear float glass on inner side and 6mm thick reflective toughened glass on outer side. The two glasses shall be separated by 12mm air-gap and hermetically sealed by beading of anodized aluminum with outer edge sealed with silicon sealant. Outer glass of 6mm thickness shall have following technical characteristics: Solar factor 25% or less, Maximum U-value 3.3 W/ SQMK, VLT min 30%: Light reflection internal 10 to 15%, light reflection external 10 to 20 %, shading coefficient (0.25-0.28). (only single elevation area to be measured)	SQM	135	0.00072268
Aj	6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	10	0.00001655
916	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.	RM	10	0.00000176
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	15	0.00002180
918	Providing and fixing steel louvered window with ISMC 100 frame all round including verticals with 18G pressed steel louvers, painting etc. all complete.	SQM	3	0.00000758
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	3	0.00001057
A920	Providing and fixing of welded wire fabric of 1.6mm thick wire as per IS: 4948 and 12mm x 30mm mesh size. In conveyor gallery Windows.	SQM	25	0.00000373
A923	Providing and fixing anodised aluminium grill (anodised transparent or dyed to required shade according to IS: 1868 with minimum anodic coating of grade AC 15) of approved design/pattern, with approved standard section and fixed to the existing window frame with C.P. brass/ stainless steel screws @ 200 mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodised aluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment). Payment: supply 70%, fixing 30%	KG	170	0.00009646
1000	BRICKWORK			
	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 for the following:(Cement shall be provided by BHEL free of cost.)			
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	225	0.00120595
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	CUM	10	0.00006465
d	Using burnt clay bricks of class designation 5.0 of nominal dimension	CUM	10	0.00005581
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	1129	0.00696152
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	CUM	10	0.00007238
d	Using burnt clay bricks of class designation 5.0 of nominal dimension	CUM	10	0.00006380
A1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 345mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.			
d	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	131	0.00121169

VOLUME-III PRICE SCHEDULE, REV-01				
JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.				
TENDER NO.- PSER:SCT:KGN-C2094:21				
SCH-2 : PRICE BREAK-UP				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
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	80	0.00005991
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	8	0.00000839
1006	Providing and encasing of structural steel member with masonry work around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar of 1:6. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (Chicken wire mesh to paid separately)	CUM	3	0.00001656
1007	Providing and laying 75 mm thick bed of dry brick aggregate including of excavation, disposal of surplus earth spreading of earth, ramming, watering etc. complete in all respects as directed by the engineer.	SQM	3	0.00000059
1008	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar 1:6 etc. complete.	CUM	9	0.00001134
1009	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	23	0.00000343
1010	Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar 1:6, painting, finishing to match with existing finishing, scaffolding/supporting at all level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete.	SQM	8	0.00000699
1011	Providing and filling brick bats in soak pits all complete.	CUM	8	0.00000936
1100	DAMP PROOF COURSE			
	DAMP PROOF COURSE: Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge for the following (Cement shall be provided by BHEL free of cost.):			
A1101	Providing Damp Proof Course of following thickness with M20 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 etc. all complete as per specification.			
b	50mm thick	SQM	296	0.00009591
1200	CEMENT MORTAR PLASTER			
	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 for the following: (Cement will be supplied by BHEL free of cost.)			
A1201	Providing 18mm thick plaster consisting first (base) layer of 12mm thick plaster in cement sand mortar 1:6 and second (finish) layer of 6mm thick plaster in cement sand mortar 1:4 including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete as per specification.	SQM	5963	0.00214137
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	3126	0.00094287
A1202	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:4 on walls finished to a smooth finish as per specification all complete.	SQM	347	0.00010466
A1203	Providing all external / internal RCC surfaces including RCC parapet walls shall be provided with minimum 12mm thick plaster in cement sand mortar (1:4) except walls of underground structures like cable trenches / valve pits etc.	SQM	1391	0.00041956
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	7489	0.00218617
1205	Providing 12mm thick plaster in walls, drains/culverts with a paste of neat cement @ 1kg/sqm and rubbed smooth with trowel etc. all complete.	SQM	100	0.00001127
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	10	0.00000023
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 enginner in charge (chicken wire mesh to be paid separately)	SQM	10	0.00000563
1209	Ruled pointing in masonry in Cement Mortar 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	5	0.00000055
A1210	Providing drip course in cement mortar (1:3) in parapet, chajjas, window/door heads, architectural facias, fins etc. all complete.	SQM	5	0.00000059
1300	FINISHES TO CONCRETE / PLASTERED SURFACES			
	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 for the following:			

<p style="text-align: center;">VOLUME-III PRICE SCHEDULE, REV-01</p>				
<p style="text-align: center;">JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.</p>				
<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
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	95	0.00000223
1304	Two or more coats of acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.	SQM	11229	0.00076373
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	746	0.00007335
1306	Providing and applying 2 or more coats of acid/alkali resistant paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying bitumen primer confirming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	10	0.00000260
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 confirming 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	50	0.00000784
A1308	Providing and applying 2 or more coats of Acid/alkali resistant Chlorinated Rubber paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying appropriate primer all complete as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level.	SQM	255	0.00004000
1309	Two or more coats of fire resistant transparent paint (@3.5 litre per sqm 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	10	0.00000342
1314	Providing and applying resin bonded granular textured finish, for external applications shall consist of crushed stone/quartz chips of .5 mm to 2.5 mm size and of approved natural color/shade and bonded with synthetic resins, 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. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	50	0.00005243
1316	Providing and applying 2 mm thick plaster of paris punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	150	0.00001248
1317	Providing and applying 2 mm thick white cement 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	407	0.00003397
A1317	Providing and applying 2 mm thick polymer based water resistant putty 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	816	0.00008114
1319	Providing and applying two or more coats of Acrylic based weather coat paint of approved brand and manufacture and required shade over one coat of primer after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellant and extremely durable with color fastness as per specification.	SQM	25	0.00000221
A1319	Providing and applying two or more coats of Acrylic smooth exterior paint with silicon additives of approved brand and manufacture and required shade over suitable primer after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellant and extremely durable with color fastness as per specification.	SQM	5948	0.00063089
1320	Providing and applying acid alkali and oil resistant high build, solvent free, self smoothing, seamless epoxy based amine cured floor finish 150 microns over primer on C.C. flooring.	SQM	8	0.00000188
1400	FLOORING AND SKIRTING			
	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 for the following (Cement shall be provided by BHEL free of cost.):			
1401	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 1:2:4 (1 cement: 2 sand : 4 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, aluminium strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips):	SQM	100	0.00004487
A1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron paricles in flooring. Under layer of 38mm thick M20 grade cement concrete mix (with stone chips of size 12.5mm well graded) and top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips):	SQM	18419	0.00826463

<p style="text-align: center;">VOLUME-III PRICE SCHEDULE, REV-01</p>				
<p style="text-align: center;">JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.</p>				
<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates) flooring 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 1:2:4 (1 cement: 2 sand : 4 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, aluminium strips etc. all complete as per specification. (Quoted item rate shall be inclusive of providing glass joint strips).	SQM	50	0.00001702
A1404	Providing and laying interlocking M30 Grade concrete blocks in paving with approved colour and pattern and should be laid on the subbase and bedding of sand minimum 50mm thick as per specifications and recommendations of manufacturer.(inclusive of cost of cement for paver manufacturing). Payment: supply 60%, fixing 40%			
a	80mm	SQM	1425	0.00115539
1406	Providing and laying polished Kota stone 18mm to 20mm thk in flooring. Under bed shall average 30mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete. Payment: supply 60%, fixing 40%	SQM	50	0.00006186
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: supply 60%, fixing 40%	SQM	555	0.00126421
A1416	Providing and laying vitrified ceramic tiles of mirror polished variety of size 600x600 from reputed / approved manufacturer, complete including underbed of cement mortar 1:3 minimum 18mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3Kg/sqm , 3 mm groove joint pointed neatly with 3x4mm stainless epoxy grout SP-100 of laticrete or approved equivalent etc. all complete for following Payment: supply 60%, fixing 40%			
b	9mm thick tiles	SQM	459	0.00045063
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			
b	10mm thick tiles In flooring	SQM	70	0.00007196
d	10mm thick tiles In skirting and dado upto specific height	SQM	40	0.00004235
A1419	Providing and laying granite stone slab of 18mm thickness single piece for wash basin / sink slab /facia of black or approved colour with cutting,making corners,moulding and opening etc. all complete.	SQM	10	0.00002965
A1421	Providing and laying Heavy Duty dust pressed (grade-5) Ceramic Tiles (Matt Finish) of size 600x300mm (approved size) and 7mm thick of reputed / approved manufacturer (Kajaria,jhonson,Sparte or equivalent) of approved finish, shade and colour. The tiles shall be scratch resistance of minimum 5 on Mohr's scale and shall have a bending strength of 350 Kg./sqm,with Under bed shall average 43mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level including cement mortar with neat cement slurry @3.3kg/sqm all complete. Payment: supply 60%, fixing 40%	SQM	50	0.00006230
A1422	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles conforming to IS:4457 in flooring/Dado and shall be laid over bitumastic lining of min 12mm thick (to be laid in layers of 6mm each). The tiles shall be applied with 6mm thick Potassium Silicate bedding mortar as per IS:4441, 4443 & 4832, 6mm thick pointing of joints with acid/alkali resistant epox/furane mortar up to a depth of 20mm and bituminastic end sealing and including preparation of surface, application of bitumen primer, curing etc. all complete as per specification. The tiles should be abrasion resistant & durable. Payment: supply 60%, fixing 40%	SQM		
a	12mm thick tile	SQM	200	0.00020857
b	20mm thick tile	SQM	235	0.00040844
1428	Providing and laying 3mm thick antistatic PVC flooring / skirting of approved shade,as per IS:3462 and laying as per IS:5318 all complete.	SQM	63	0.00004656
1429	Providing and fixing removable type flooring system consisting of fire resistant particle board of size 600X600X35 mm with 0.05 mm thick aluminium foil lining at bottom and with 2 mm thick anti static PVC topping including proprietary floor supporting system complete as per specification.	SQM	35	0.00016157
1500	ROOFING / SIDE CLADDING			
	ROOFING / SIDE CLADDING: Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			

<p style="text-align: center;">VOLUME-III PRICE SCHEDULE, REV-01</p>				
<p style="text-align: center;">JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.</p>				
<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
A1502	<p>Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour over floor beams for cast-in-situ roof slab as per relevant IS code and Grade as per NTPC specification. Deck Sheet shall serve as permanent shuttering to the roof slab 150mm thick measured over crest of metal decking & shall have adequate strength to support self weight, weight of green concrete and imposed loads of 100 kg/sqm during construction between beams as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to beams, side lapping, end lapping etc. all complete for below mentioned spans. The Sheet shall be colour coated with total coating thickness of at least 40 microns (nominal) comprising of silicon modified polyester (SMP with silicon content of 30% to 50%) paint or Super Polyester paint, of minimum 20 microns (nominal) dry film thickness (DFT) on external face over primer coat of minimum 5 microns (nominal) and minimum 10 microns (nominal) SMP or super polyester paint over primer coat of minimum 5 microns (nominal) on internal face. SMP and Super polyester paint systems shall be of industrial finish of product type 4 of AS/NZ2728, including fixing of sheet to top flange of beam with drawn arc welding of headed shear anchor studs @ 260mm c/c in the trough and stitch screws between two adjacent sheets and sealing with epoxy sealant. The shear anchor studs shall conform to type B studs specified in AWS D1.1/D1.1M or equivalent as shear connector of 19 mm dia & 100 mm length manufactured from cold drawn round steel bars confirming to ASTM A 29 of grade designation 1010 through 1020 of standard quality with either semi killed or killed welded by drawn arc stud welding through metal deck sheet. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking. The SMP and polyester paint shall confirm to product type 4 as per AS/NZS 2728. Bare Metal sheet shall be chosen ANY ONE of FOUR options specified below: Payment: supply 70%, fixing 30%</p>			
	<p>i) Bare metal thickness(BMT) of deck plate shall be minimum thickness 0.8mm (i.e. excluding the thickness of galvanizing/aluminium-zinc coating and painting)with minimum trough depth of 44 mm of grade G250 as per AS1397 / grade SS255 as per ASTM A653M / grade S250GD as per EN 10326 with zinc coating to class Z275 (or) ii) Or of minimum 0.6mm BMT (i.e. excluding the thickness of galvanizing/aluminium-zinc coating and painting) of grade G350 as per AS1397 / grade SS340 class 4 as per ASTM A792M / grade S350GD as per EN 10326 with zinc coating to class Z275 (or) iii) Or of steel of minimum 0.6mm BMT (i.e. excluding the thickness of galvanizing/aluminium-zinc coating and painting) of grade G550 as per AS1397 / grade SS550 as per ASTM A792M / grade S550GD as per EN10326 with zinc coating to class Z275. (or) iv) Or of aluminium feed material of minimum bare metal thickness of 0.9 mm of aluminium alloy of Series 31000 and above as per IS 737 and IS 1254 can also be used for metal decking.</p>			
a	Span Upto 1800mm	SQM	3015	0.00395496
b	Span Exceeding 1800mm and upto 2500 mm	SQM	2203	0.00288981
A1503	<p>Providing and fixing shear connectors of mild steel studs having 16mm/19mm dia and minimum 65mm/100mm projected length above purlin passing through metal decking as per relevant IS \ AWS D1.1 \ D1.1M \ ASTM A29 codes and specification.</p>	QUINTAL	16	0.00032030
A1508	<p>Designing, providing and fixing Permanent colour coated metal cladding with minimum 30mm troughed M.S. sheets (as per NTPC Spec, by taking either one of the four options mentioned below). The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability. Zinc coating if required as per item specified below shall be 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 Sheet shall be colour coated with total coating thickness of at least 40 microns (nominal) comprising of silicon modified polyester (SMP with silicon content of 30% to 50%) paint or Super Polyester paint, of minimum 20 microns (nominal) dry film thickness (DFT) on external face over primer coat of minimum 5 microns (nominal) and minimum 10 microns (nominal) SMP or super polyester paint over primer coat of minimum 5 microns (nominal) on internal face. SMP and Super polyester paint systems shall be of industrial finish of product type 4 of AS/NZ2728, Side cladding sheets shall be fixed to the runner/purlins/ Brickwork using selfdrilling special coated fasteners confirming to corrosion resistant class 3 of AS3566 and tested for 1000 hours salt spray test. Spacing of Self-drilling fasteners in transverse direction (along runners/purlin/brickwork) shall be equal to the pitch of trough or 250(+/-100) mm. Lap between the sheets shall be at least 150mm in the longitudinal direction and at least one crest wide in the transverse direction which shall be properly anchored / fixed with fasteners, all complete as per NTPC Specifications. Bare Metal Sheet shall be chosen ANY ONE of FOUR options specified below : Payment: supply 70%, fixing 30%</p>			
	<p>Sheet shall be of steel with minimum 0.6mm bare metal thickness (i.e. excluding the thickness of galvanizing/aluminium-zinc coating and painting) of grade G250 as per AS1397 / grade SS255 as per ASTM A653M / grade S250GD as per EN 10326 with zinc coating to class Z275 / aluminium-zinc alloy coating to class AZ150. (Or) of minimum 0.5mm BMT (i.e. excluding the thickness of galvanizing/aluminium-zinc coating and painting) of grade G350 as per AS1397 / grade SS340 class 4 as per ASTM A792M / grade S350GD as per EN 10326 with zinc coating to class Z275 / aluminium-zinc alloy coating to class AZ150 (Or) of steel of minimum 0.4mm BMT (i.e. excluding the thickness of galvanizing/aluminium-zinc coating and painting) of grade G550 as per AS1397 / grade SS550 as per ASTM A792M / grade S550GD as per EN10326 with zinc coating to class Z275 / aluminium-zinc alloy coating to class AZ150. (Or) of aluminium feed material of minimum bare metal thickness of 0.7 mm of aluminium alloy of Series 31000 and above as per IS 737 10 microns (</p>	SQM	19011	0.02752108

<p style="text-align: center;">VOLUME-III PRICE SCHEDULE, REV-01</p>				
<p style="text-align: center;">JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.</p>				
<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
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: supply 60%, fixing 40%			
a)	For insulation in Sandwich Cladding	SQM	130	0.00005319
ISG1519	Design, supply & erection of permanent colour coated Pre-Fabricated sandwiched insulated metal cladding of approved shade and color comprising of top sheet as troughed permanently colour coated sheet & bottom sheet as plain permanently colour coated with 50mm thick insulation sandwiched between the two sheets etc all complete as per specification. Each sheet shall be of steel with minimum thickness (i.e. excluding the thickness of coating and painting) 0.6mm of grade G250 as per AS1397/ grade SS255 as per ASTM A653M / grade S250GD as per EN 10326 or of steel with aluminium-zinc alloy coated to class AZ150 with minimum bare metal thickness (i.e. excluding the thickness of coating and painting) of 0.5mm of grade G350 as per AS1397 / grade SS340 class 4 as per ASTM A792M / grade S350GD as per EN 10326 or of steel with aluminium-zinc alloy coated to class AZ150 with minimum bare metal thickness (i.e. excluding the thickness of coating and painting) of 0.4mm of grade G550 as per AS1397 / grade SS550 as per ASTM A792M / grade S550GD as per EN 10326. Metal sheets shall be colour coated with total coating thickness of at least 40 microns (nominal) dry film thickness (DFT) comprising of Silicon Modified Polyester (SMP with silicon content of 30% to 50%) paint or Polyester paint, of minimum 20 microns (nominal) SMP or polyester paint on one side (exposed face), over minimum 5 micron (nominal) primer coat and minimum 10 micron (nominal) SMP or Polyester paint over minimum 5 micron (nominal) primer coat on other side. SMP and Super Polyester paint shall conform to product type 4 of AS/NZS 2728. The sheets shall be of approved profile and shall have such section modulus and moment of inertia per metre width that deflection of sheets is limited to span/250 under design wind pressure for two span conditions. No increase in allowable stresses under wind load condition is allowed. Special coated fastener conforming to corrosion resistant Class 3 of AS3566 and tested for 1000 hours salt spray test shall be used for fixing Pre-Fabricated Insulated Metal Sandwich Panels with the structural members below as per specification. For insulation of cladding, mineral wool conforming to IS: 8183 shall be used. The density shall be 32 or 48 kg. /cu.m for glass or rock wool respectively. The nominal thickness of insulation shall be 50mm. Payment: supply 70%, fixing 30%	SQM	835	0.00207428
ISG1520	Providing & fixing permanently at all heights and elevations, troughed sheets over roof purlins/beams/side runners etc for roofing and side cladding (internal & external) including all labour, material, equipment, transportation, handling, scaffolding, ladders, hooks, washers, corner pieces etc. at any level as per specification, drawings and as directed by engineer - in - charge. Quoted rate shall include cost of all labour, material, tools and plants, consumables, lead, lift etc complete. Fixing fire resistant and UV resistant polycarbonate translucent sheets of minimum 3MM thickness on roof & side cladding as per the specification and approved drawings and directions of engineer in charge. Payment: supply 70%, fixing 30%	SQM	725	0.00086527
1600	FALSE CEILING			
	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 for the following:			
A1602	Providing, fixing and laying light weight mineral fibre 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 including 50mm thick mineral wool insulation (density 48kg/cum) as per IS:8183 backed with 0.05 mm thick aluminium foil & 24 G x 25 mm mesh wire netting and shall be fixed to ceiling with 24 G wire ties and suitable fixing arrangements. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc. suitable M.S. channel (minimum MC 75 @ 1.2m) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc. The size of tiles shall be 600 X 600 mm or 600 X 1200 mm. Required MS channel shall be measured & paid extra under respective item unit rate. Payment: supply 60%, fixing 40%	SQM	113	0.00013152
A1603	Providing and fixing permanently colour coated aluminium false ceiling of approved colour and Luxalon 84 C or approved equivalent with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (density 48 kg/cum) conforming to IS:8183 backed with 0.05 mm thick aluminium foil & 24 G x 25 mm mesh wire netting and shall be fixed to ceiling with 24 G wire ties and suitable fixing arrangements. 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 A2301) Payment: supply 60%, fixing 40%	SQM	13	0.00003616
A1604	Providing, fixing and laying Aluminum false ceiling of 600 mm x 600 mm tile of 0.6 mm thick (minimum) with perforation of 2.5 mm dia in combination with built in nonwoven tissue for providing good acoustic properties having coil coating of thickness 25micron (minimum) and installed with T-Grid (of profile 24 mm) in same or contrasting colours or with 6 mm recess joints. Aluminum false ceiling shall be of Luxalon, Durlam or equivalent. 50 mm thick mineral wool insulation (conforming to IS : 8183) shall be provided with as under deck insulation). Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures etc. all complete as per specification. Payment: supply 60%, fixing 40%	SQM	420	0.00140196
1700	RAIN WATER DOWN TAKE PIPES			

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ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
	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 for the following:			
A1704	Providing and fixing galvanised MS down take pipes conforming to IS: 1239/IS: 3589 of 150 mm dia- Medium quality as per IS:1239(part-I) all complete as per specification. (Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 400 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. All rain water down comers shall be provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anticorrosive painting over a coat or primer. Downcomers shall be provided with 45 x 45 cm size Khurras having minimum thickness of 30 mm with M-20 concrete over PVC sheet of 1mx1mx400micron and finished with 12 mm thick cement sand plaster 1:3.The rainwater down comers shall be provided with suitable C.I. grating at inlet point etc. all complete as specification. Payment: supply 70%, fixing 30%	RM	1345	0.00222925
B1704	Providing and fixing galvanised MS down take pipes conforming to IS: 1239/IS: 3589 of 150 mm dia- Medium quality as per IS:1239(part-I) all complete as per specification. (Galvanising shall be as per IS: 4736. The minimum mass of zinc coating shall not be less than 400 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. All rain water down comers shall be provided with roof drain heads and complete with shoes bends, junctions, sockets, adapters, brackets and finished with anticorrosive painting over a coat or primer. Downcomers shall be provided with 45 x 45 cm size Khurras having minimum thickness of 30 mm with M-15 concrete over PVC sheet of 1mx1mx400micron and finished with 12 mm thick cement sand plaster 1:3.The rainwater down comers shall be provided with suitable C.I. grating at inlet point etc. all complete as specification. Payment: supply 70%, fixing 30%	RM	334	0.00055358
1705	Providing and fixing UPVC down take pipes of 110mm diameter- Class 3 as per IS:4985 all complete.	RM	10	0.00000676
1706	Providing and fixing UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete.	RM	10	0.00000926
1710	Providing and fixing galvanised ERW steel down take pipes of medium duty as per specification of following diameters.			
c	273mm OD and 4mm thick	RM	35	0.00007987
1800	MISCELLANEOUS WORKS			
	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 for the following:			
A1801	Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm (complying IRC specification) in layers not exceeding 200 mm compacted thickness including breaking of stone boulders to required sizes, filling the interstices with selected moorum/non-expansive soil 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	5146	0.01239415
B1801	Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 200 mm compacted thickness including breaking of stone boulders to required sizes, filling the interstices with selected moorum and compacting to 90 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	340	0.00081889
1802	Supply and laying approved quality Stone aggregate 40mm size in transformer yards.	CUM	84	0.00027023
1804	Providing and fixing weep holes in Retaining wall, drains, etc consisting of 100 mm dia HDPE pipe sleeves with single side covering for the pipe mouth with galvanised welded wire fabric of 20 mm sq. opening all complete.	EACH	75	0.00000952
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).	SQM	108	0.00001766
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	5	0.00003972
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. Supply of GI pipe, GI earth electrode, GI wire and GI strip are in scope of BHEL.)	EACH	5	0.00004129
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. Supply of GI pipe, GI earth electrode, GI wire and GI strip are in scope of BHEL.)	EACH	3	0.00000131
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. Supply of GI pipe, GI earth electrode, GI wire and GI strip are in scope of BHEL)	EACH	3	0.00000090

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ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
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. (Supply of GI pipe, GI earth electrode, GI wire and GI strip are in scope of BHEL)	EACH	3	0.00005751
1814	Construction of below ground earthing system test pits as per drawing/ sketches including brickwork, plaster, concreting, reinforcement, formwork, providing & fixing GI strips/pipes, GI wires, covers etc as per drawing & specification including associated earthwork. (Supply of GI pipe, GI earth electrode, GI wire and GI strip are in scope of BHEL)	EACH	3	0.00004334
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	75	0.00000644
1818	Fire proofing of steel structures with VERMICULITE cementious coating including supply of all materials for vermiculite materials, reinforcement mesh (3mm thick wire, 50x50 size mesh) , nuts, tie wires, weldings, sface preparation, curing, staging, compatible paintings etc. all complete.	CUM	3	0.00021367
1819	Supply & fixing expanded metal steel sheet conforming to IS:412. Size of mesh shall be 10mmX40mm with strands of 2.5mm width and 1mm thickness to the structural steel for facilitating fireproofing works.	SQM	5	0.00000177
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	5	0.00000271
1822	Providing & filling Bentonite Powder (Sodium base) mixed with water in electronic earthing pit as per drawing & direction below ground level including all materials, transportation, labour, incidental etc all complete as per specification.	CUM	1	0.00001222
1823	Providing and laying cinder filling in the toilets,roads,etc complete as directed by engineer in charge.	CUM	1	0.00000132
1824	Disposal of scrap steel, scrap wood, broken packing crates, cable scrap, debris and other civil waste, electrical waste materials etc. from project site to a designated place within 5 KM range, with all manpower T & P etc. including loading and unloading as and when directed by BHEL.			
a	Steel scrap / metal scrap	MT	3	0.00000099
b	Debris & Other waste materials.	CUM	3	0.00000019
1832	Providing and fixing sliding layer of bitumen paper or craft paper over the screed layer for water retaining structures to destroy the bond between the screed and the base slab concrete of the water retaining structure etc all complete.	SQM	45	0.00000074
A1839	Providing bore wells in ground with perforated/non-perforated PVC pipe of standard approved make for rain water harvesting by means of mechanical equipment including pipe, drilling inside earth, weathered rock, sandstone, shale etc. upto required depth at locations shown in drawing etc all complete. Depth of borewell shall vary from 6m to 15m. Payment shall be made cumulative diamterwise as per actual length of bore well and diameter as mentioned below.			
(a)	200 mm diamter	RM	3	0.00000314
(b)	300 mm diamter	RM	3	0.00000469
A1840	Supply & packing uniformly 6mm to 3mm size gravel in the bore hole surrounding the perforated PVC pipe.	Cum	3	0.00000250
A1841	Supply & packing uniformly downgraded 40mm size gravel at all depth in the pit/well dug for rain water harvesting.	Cum	3	0.00000874
A1842	Supply & packing uniformly downgraded 40mm size pebbles at all depth in the pit/well dug for rain water harvesting.	Cum	3	0.00000874
A1843	Supply & laying coarse sand layer at all depth in the pit/well dug for rain water harvesting.	Cum	3	0.00000541
A1844	Supply and fixing of bar screen of 5 mm square M. S. bar at inlet point of Rain water collecting tanks with 50 mm X 50 mm opening etc all complete	SQM	2	0.00000014
A1845	Supply & fixing 150mm dia perforated PVC pipe ISI mark 6 Kg/ cm2 with air vent at top as per the drawing & specification complete.	RM	5	0.00000456
A1846	Providing & fixing 150 dia PVC pipe ISI mark 6 Kg/cm2 as per specification.	RM	5	0.00000392
A1847	Supply & fixing Netlon jali/ PVT net in the well dug for rain water	SQM	5	0.00000097
2000	FENCING AND GATES			
	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 for the following (Cement shall be provided by BHEL free of cost.):			
2001	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. GI barbed wire fencing of height of 600 mm confirming to IS 298 at top of chain link fencing shall be provided with 4 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with barbs of 16G spaced at 100mm. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts, accessories etc. all complete. (Mild steel post/RCC post shall be paid separately under item 2007/A2007)	RM	321	0.00065162

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2007	Supply and fixing of hot dip galvanised mild steel posts for fencing . Rate of zinc coating shall not be less than 710 g/m2 on steel posts.	MT	9	0.00066694
A2007	Supply, fabrication and fixing of pre-cast RCC of minimum M20 grade 3M (250X200MM) HIGH FENCE POST including making arrangements for fixing of chain link fencing (covered in item no. 2001 above), painting etc. all complete as per specification.	Each	51	0.00004314
A2009	Supply, fabrication and installing in position and testing STEEL Gates, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, Aldrops with locking arrangement, tempered steel pivot, guide track Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete as per specification.	MT	8	0.00079090
2100	WATER SUPPLY			
	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 for the following:			
2101	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks including sockets, union, nuts etc all complete - 15mm nominal bore.	EACH	38	0.00003353
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	EACH	30	0.00001881
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.	EACH	8	0.00000780
b	50mm nominal bore.	EACH	7	0.00001641
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: Payment: supply 70%, fixing 30%			
a	15 mm nominal bore.	RM	155	0.00005763
b	20 mm nominal bore.	RM	105	0.00004288
c	25 mm nominal bore.	RM	60	0.00002818
d	50 mm nominal bore.	RM	20	0.00001336
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: Payment: supply 70%, fixing 30%			
a	15 mm nominal bore.	RM	30	0.00000932
b	20 mm nominal bore.	RM	50	0.00001736
c	25 mm nominal bore.	RM	70	0.00002853
d	50 mm nominal bore.	RM	50	0.00003035
2106	Providing and fixing 610mmx453mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc all complete.	NOS	1	0.00000103
A2106	Providing and fixing wall to wall mirror of height 450mm & 6 mm thk float glass from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc all complete.	EACH	7	0.00000719
A2108	Providing and fixing 20 mm diameter stainless steel towel rails (600mm X 20mm) all complete.	EACH	8	0.00000388
2110	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	EACH	8	0.00000432
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.	EACH	8	0.00000391
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. sll complete.	EACH	8	0.00000424
2113	Providing and fixing chromium plated brass shower rose 100mm dia with 15 or 20 mm inlet dia all complete.	EACH	4	0.00000316
A2114	Providing & fixing in position High density polyethylene (cylindrical/vertical) molded seamless type 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	EACH	12	0.00006654
b	1000 litres capacity	EACH	4	0.00004436
2116	Providing and fixing glass shelves 600mmx127mmx4 mm with chromium plated brackets all complete.	EACH	2	0.00000016
2117	Providing and fixing metal storing cabinets all complete.	EACH	2	0.00000241
2118	Providing Minimum 600 mm long porcelain tray etc all complete..	EACH	2	0.00000128
2119	Providing and fixing Recessed porcelain soap tray in shower area etc all complete.	EACH	2	0.00000040
2120	Providing and fixing grab bars, barrier-free access and appropriate fittings and fixtures for toilets for handicapped etc. all complete.	EACH	2	0.00000160
A2121	Providing and fixing Electric operated hand dryer with photo voltaic control including fittings, cutting and making good the wall where required etc. all complete.	EACH	2	0.00000411
2200	SANITARY WORKS			
	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 for the following:			

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ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
A2201	Supply and fixing glazed vitreous china Wash Basin of (oval shape) approved make (with photovoltaic control) conforming to IS:2556 part 4 of oval shape with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug, 32mm chromium plated brass bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required etc all complete.			
a	White	EACH	5	0.00006411
b	Colored	EACH	3	0.00004014
2202	Providing and fixing approved vitreous china laboratory sink of size 600x400x200mm conforming to IS:2556 (part-5) with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, 40mm CP brass waste and 40mm CP brass trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	1	0.00000610
A2203	Providing and fixing stainless steel kitchen sink of size 600x400x200mm conforming to IS: 13983 including all fittings etc. all complete.	EACH	3	0.00002123
A2204	Providing and fixing colour glazed vitreous china European type water closet conforming to IS:2556 with siphon, open front solid plastic seat, flush valve and plastic cover, low level 12.5 litre PVC flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc all complete.			
b	Wall mounted	EACH	14	0.00007154
2205	Providing and fixing colour glazed vitreous indian type Orissa pattern (580x440mm) water closet conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, necessary C.P connections etc all complete.	EACH	3	0.00001616
A2206	Providing and fixing white flat back glazed vitreous china lipped urinals of size 440x265x355 mm with photo voltaic control flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings, with provision of squatting urinal for ladies toilet etc. all complete.	EACH	9	0.00017516
2207	Supply, laying and jointing UPVC pipes of class 3 as per IS:4985 including bends, branches and all other necessary fittings, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete for following.			
a	75mm dia pipes	RM	10	0.00000333
b	110mm dia pipes	RM	10	0.00000452
c	160mm dia pipes	RM	10	0.00000780
d	200mm dia pipes	RM	10	0.00000899
A2207	Supply, laying and jointing Class-3 CPVC pipes as per IS:15778 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	510	0.00136046
b	110mm dia pipes	RM	20	0.00007727
c	160mm dia pipes	RM	20	0.00015666
d	200mm dia pipes	RM	30	0.00036741
2208	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc all complete for following.			
a	200mm dia	RM	23	0.00001109
b	300mm dia	RM	13	0.00001264
c	450mm dia	RM	13	0.00002213
d	600mm dia	RM	21	0.00004536
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.			
a	150mm dia	RM	20	0.00000950
b	250mm dia	RM	13	0.00000843
c	300mm dia	RM	3	0.00000220
d	450mm dia	RM	3	0.00000319
e	500mm dia	RM	1	0.00000111
A2209	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 complete for following.			
a	150mm dia	RM	5	0.00000181
b	250mm dia	RM	20	0.00001206
c	400mm dia	RM	10	0.00001513
2211	Providing and fixing C.I Manhole heavy duty cover of size 600mmx450mm including frame from reputed manufacture etc. all complete.	EACH	22	0.00025920
2212	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	12	0.00014192
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	7	0.00001892
b	150x100mm P or S Type.	EACH	7	0.00001940
c	150x150mm P or S Type.	EACH	7	0.00001985
2214	Providing and fixing C.I. floor traps size 100 mm Inlet and 100 mm Outlet Sand Cast Iron S&S as per IS: 1729 with C.P jalli all complete.	EACH	12	0.00001786
2215	Providing and fixing 100mm heavy duty UPVC floor traps with 100 mm inlet and 100 mm outlet & C.P jalli all complete.	EACH	32	0.00004095

<p style="text-align: center;">VOLUME-III PRICE SCHEDULE, REV-01</p>				
<p style="text-align: center;">JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.</p>				
<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
2216	Providing and installing approved brand single tap water cooler of 80 L cooling capacity all complete.	EACH	11	0.00052944
2217	Providing and installing approved brand single tap water cooler of 150 L cooling capacity all complete.	EACH	6	0.00051871
2218	Providing and fixing white vitreous urinal partitions of size 675x325x85mm all complete.	EACH	15	0.00003534
2219	Providing and fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.	EACH	3	0.00001987
2221	Providing, laying spun CI pipes with conforming to IS 1536 complete for following.(Excavation,backfilling,concrete to be paid seperately)			
c	150mm dia	RM	105	0.00024709
d	200mm dia	RM	80	0.00027039
e	250mm dia	RM	5	0.00002211
f	300mm dia	RM	25	0.00013958
2300	STRUCTURAL STEEL			
	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 for the following:			
A2301	Supply, Fabrication, erection and alignment of structural steel (factory fabricated) with mild steel rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc. including 2 coats of red oxide zinc-chromate primer (one coat at shop and one coat after erection), connection design & preparation of fabrication drgs., collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20o C for welding over 20 mm and up to 40 mm & 66o C for welding over 40 mm and up to 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, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc. all complete. Including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drgs., in consultation with BHEL. (Corrosion category shall be considered as C3). Payment:Supply 80% Erection and alignment-20%	MT	5024	0.27066832
A2302	Extra over ST NO. A2301 for blast cleaning for making surface conforming to Sa 2 ½ finish of ISO 8501-1 with surface profile 40-60 Micron and providing with two component moisture curing zinc (ethyl) silicate primer coat (having minimum 80% of metallic Zinc content in dry film, solid by volume minimum 60% ±2%) of minimum 70 micron DFT, instead of primer coat of red oxide zinc-chromate, including touch-up painting, mist coat, additional water sprinkling etc all complete. The primer coat shall be applied in shop immediately after blast cleaning by airless spray technique. Zinc dust composition and properties shall be Type-II as per ASTM D520-00.	MT	5024	0.02782773
A2304	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 . This coat shall be applied in shop after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	112	0.00061192
B2304	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 including protection and cleaning, scaffolding , touchup painting etc. all complete as per specification for all structures . This coat shall be applied at shop after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer.	MT	112	0.00044619
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. This coat shall be applied in shop after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique including protection and cleaning, scaffolding etc. all complete as per specification for all structures .	MT	4912	0.02561211
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 including protection and cleaning, scaffolding , touchup painting etc. all complete as per specification for all structures . This coat shall be applied at shop after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer.	MT	4912	0.02561211

<p style="text-align: center;">VOLUME-III PRICE SCHEDULE, REV-01</p>				
<p style="text-align: center;">JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.</p>				
<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
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. Payment: supply 75%, fixing 25%			
a	Minimum galvanisation of 610 g/sqm	MT	34	0.00373623
2308	Supplying, fabrication, erection and alignment of factory made galvanised welded grating units with mild steel 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 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete. Payment: supply 75%, fixing 25%	MT	8	0.00068450
A2309	Extra over above ST NO. A2301 for finishing the grating units/bolts/inserts with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces instead of painting with two coats of red oxide zinc-chromate primer all complete.	MT	3	0.00007255
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	38	0.00000329
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.	KG	1560	0.00022245
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	13	0.00007923
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	6	0.00008604
b	In fabrication yard	MT	3	0.00003553
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	8	0.00007152
B2316	Supply, fabrication and erection of minimum 4.00 mm thick stainless steel liner of grade SS:409M on M.S. plate for inside surfaces of hopper & mouth of hopper of bunkers including fixing with stainless steel studs, bolting (including countersunk), welding with electrode classification E308L for welding of stainless steel to stainless steel and E309 for stainless steel to mild steel, fabrication detailed drawing etc.all complete. (The measurement for the item of stainless steel liner in hopper shall be based on the actual finished weight of SS liner over hopper). Payment:Supply 70% Fabrication, Erection and alignment-30%	MT	69	0.02291223
2318	Providing and fixing in position POT PTFE type sliding bearings of reputed manufacturer, individual bearing suitable for required vertical loads as per the construction drawings and for maximum displacement of ±50 mm including all taxes, duties, transportation, installation, drilling, bolting, erecting, aligning etc all complete for following vertical loads.			
a	20 Tons	EACH	1	0.00001253
b	25 Tons	EACH	2	0.00002878
c	40 Tons	EACH	1	0.00001787
A2322	Supply, fabrication and fixing of galvanised MS pipe hand railing (1000 mm high) of 32mm/40mm/50mm dia (Medium Class) including transportation, loading/unloading, painting etc. all complete. Payment: supply 75%, fixing 25%	MT	30	0.00265321
2323	Conducting radiography test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	26	0.00013539
2324	Conducting ultrasonic test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	26	0.00002009
2325	Conducting ultrasonic test on steel plates as per ASTM-A435 or equivalent wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	SQM	13	0.00000496
2326	Conducting magnetic particle test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	26	0.00001198
2327	Conducting dye penetration test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges etc. all complete (over and above the work already specified in the specifications.)	RM	26	0.00001332

<p style="text-align: center;">VOLUME-III PRICE SCHEDULE, REV-01</p>				
<p style="text-align: center;">JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.</p>				
<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
2328	Supply, fixing lightning arrester and air terminal over roof of power house building, pump house and other structures including all materials, labour, electrodes etc complete (all materials to be supplied by the contractor).	EACH	1	0.00000381
2334	Providing and fixing 20mm square MS bar balustrade with suitable MS flat and teakwood handrails etc all complete.	RM	10	0.00005972
2400	ROAD WORKS			
	ROAD WORKS: Road works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation etc. as per specification drawing, relevant IRC & IS codes and as directed by the Engineer-in-charge for the following (Cement shall be provided by BHEL free of cost.) :			
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	3495	0.00010698
2402	Supplying and filling with selected good earth of approved quality in layers not exceeding 300 mm loose thickness using borrowed CNS/Morrum (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	1058	0.00014850
2403	Providing, stacking & laying granular morrum for shoulder including watering, compaction with road roller to required camber etc all complete.	CUM	234	0.00039238
2404	Providing & laying water bound macadam sub base course in layers of required thickness with crushed stone aggregates 90 to 40 mm down size (IRC 19 - grading -1), stone screening & blinding material including screening, sorting, spreading to template & consolidation with road roller including carriage, spreading & consolidation of blinding material moorum etc all complete.	CUM	60	0.00017766
2405	Providing & laying water bound macadam base course in layers of required thickness with stone aggregate 63mm to 40mm size(IRC 19 - grading -1), stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc all complete.	CUM	1047	0.00334325
A2405	Construction of granular sub-base by providing 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	112	0.00035763
2406	Providing & Laying water bound macadam base course with stone aggregate 50mm to 20mm size stone (IRC 19 -grading -1) screening & binding material including screening, sorting, spreading to template & consolidation with road roller including carriage spreading & consolidation of blinding material moorum etc all complete.	CUM	65	0.00021954
2413	Supplying and laying 400mmx150mmx350mm deep precast concrete kerb stone of grade M-20 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	500	0.00014732
A2414	Supply and laying 200 mm dia R.C.C NP-3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste etc all complete.	RM	90	0.00004347
B2414	Supply and laying 600 mm dia R.C.C NP-3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste etc all complete.	RM	10	0.00002160
A2415	Supply and laying 150mm dia R.C.C NP-3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:3) in 13mm thick joints, finishing of joints with neat cement paste etc all complete.	RM	22	0.00000797
2416	Dismantling of existing road consisting of premix carpet, kerb stone/ brick on edge, bitumen macadem course, WBM, preparing subgrade to receive new WBM including camber consolidation including disposal of debris within a lead of 1 km etc all complete.	SQM	100	0.00000664
	Providing and placing concrete work in road 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:			
2418	Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc.	CUM	331	0.00127836
A2418	Providing & laying dry lean cement concrete of grade M10 with 20 mm nominal size graded stone aggregate over a prepared sub-grade including compaction, finishing, curing etc all complete.	CUM	326	0.00123179
A2419	Providing and laying (using fully mechanised paver) cement concrete of grade M35 using 20 mm nominal size stone aggregate with approved admixture (if required), provision for necessary joints including compaction, finishing to lines and grades, curing and providing & fixing formwork etc. all complete. (Excluding the cost of reinforcement and dowel bar & shuttering/formwork)	CUM	538	0.00207059

<p style="text-align: center;">VOLUME-III PRICE SCHEDULE, REV-01</p>				
<p style="text-align: center;">JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.</p>				
<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
A2420	Supplying and filling sand for preparation of road sub-base/ sub-grade 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	15	0.00002783
A2423	Providing and fixing separation Membrane of impermeable plastic sheeting of 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	425	0.00006555
2425	Providing and fixing in position MS dowel bar reinforcement including surface painted with bitumen and greasing, dowel end caps with cotton fills etc all complete as per specification, drawing and as directed by Engineer.	MT	2	0.00010962
	MISCELLANEOUS			
2428	Providing & installation of bitumen impregnated fibre board of 25 mm thickness confirming to IS 1838 as joint filler including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete as per specification, drawing and as directed by engineer.	RM	27	0.00000320
2429	Providing and filling in position hot applied bitumen sealing compound (Grade A) of 25 mm thickness confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints, sealant primer etc all complete as per specification, drawing and as directed by Engineer.	RM	98	0.00000333
2430	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	15	0.00000650
2436	Providing and laying Inverted Choke with 25 mm course of screenings (Grading-B) over prepared subgrade including compaction etc all complete as per specification, drawing and as directed by Engineer.	CUM	1	0.00000067
2500	PILING WORK: Piling works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge. Cement shall be supplied by BHEL free of cost. Reinforcement steel required for piling work shall be provided by BHEL free of cost. Payment for transportation of reinforcement steel, cutting, bending and placing for piling installation work shall be paid under relevant item of 400 series.			
A2501	Mobilisation of hydraulic rotary piling rigs and accessories capable of pile boring/drilling in all types of strata/ash etc., installing various size of bored cast in situ RCC piles to project site and demobilisation of the same after completion of piling works etc all complete.	EACH	6	0.00882193
2503	Mobilisation of conventional DMC/RMC piling rigs and accessories capable of pile boring/drilling in all types of strata/installing various size of bored cast in situ RCC piles to project site and demobilisation of the same after completion of piling works etc all complete.	EACH	2	0.00017655
A2504	Installation of Bored cast-in-situ RCC vertical pile as per IS 2911 (Part 1 Sec 2) with diameter and length as specified (length to be measured from pile cut-off level to the bottom of pile) using cement concrete grade M30 conforming to IS:456 with 20 mm nominal size stone aggregates with a minimum cement content of 400Kg per cum of concrete including providing all materials (but excluding reinforcement steel for which measurement/payment shall be made separately in ST No A402 whichever applicable), boring/drilling in all types of soil, providing bentonite slurry and/or casing for stabilization of pile bore, flushing of pile bore, cleaning, providing plasticizer wherever required, breaking pile head to cut off level and exposing pile reinforcement for embedment in pile cap etc including empty boring from ground level to pile cutoff level etc all complete as per specification, drawing and as directed by the engineer-in-charge for the following.			
d	Pile with 600 mm diameter and 28 m length below cut off level	EACH	3077	0.19868086
e	Pile with 760 mm diameter and 31 m length below cut off level	EACH	441	0.03987670
E2504	For test pile installation-Installation of Bored cast-in-situ RCC vertical pile as per IS 2911 (Part 1 Sec 2) with diameter and length as specified (length to be measured from pile cut-off level to the bottom of pile) using cement concrete grade M30 conforming to IS:456 with 20 mm nominal size stone aggregates with a minimum cement content of 400Kg per cum of concrete including providing all materials (but excluding reinforcement steel for which measurement/payment shall be made separately), boring/drilling in all types of soil, providing bentonite slurry and/or casing for stabilization of pile bore, flushing of pile bore, cleaning, providing plasticizer wherever required, breaking pile head to cut off level and exposing pile reinforcement for embedment in pile cap etc including empty boring from ground level to pile cutoff level etc all complete as per specification, drawing and as directed by the engineer-in-charge for the following. Cement required for this item shall be in the scope of contractor. Reinforcement steel shall be supplied by contractor and will be paid under item no. 402.			
d	Pile with 600 mm diameter and 28 m length below cut off level	EACH	12	0.00098287
e	Pile with 760 mm diameter and 31 m length below cut off level	EACH	12	0.00143180
A2505	Extra over ST. No. A2504 for pile length more than the specified length below cut off level for the following.			
d	For 600 mm diameter pile	RM	524	0.00132817
e	For 760 mm diameter pile	RM	96	0.00034123
E2505	For test pile installation-Extra over ST. No. E2504 for pile length more than the specified length below cut off level for the following.			
d	For 600 mm diameter pile	RM	22	0.00006761
e	For 760 mm diameter pile	RM	26	0.00011488
A2506	Rebate on ST.No. A2504 for pile length less than the specified length below cut off level for the following.			
d	For 600 mm diameter pile	RM	270	-0.00064808
e	For 760 mm diameter pile	RM	55	-0.00017698
E2506	For test pile installation-Rebate on ST.No. E2504 for pile length less than the specified length below cut off level for the following.			
d	For 600 mm diameter pile	RM	13	-0.00003821
e	For 760 mm diameter pile	RM	18	-0.00005792
A2511	Conducting initial load test upto a maximum test load of 3 times the safe load capacity on single pile as specified in accordance with IS 2911 Part-4 including preparation of pile head for testing, necessary excavation, all arrangements of loading, unloading, test equipments/ accessories, jacks, recording of results, labour, submission of test report but excluding the cost of installation of pile (installation of pile shall be paid separately) etc. all complete as per specification, drawing and as directed by engineer in - charge for the following:			
a	For vertical compression test by cyclic load method			

<p style="text-align: center;">VOLUME-III PRICE SCHEDULE, REV-01</p>				
<p style="text-align: center;">JOB: CIVIL, STRUCTURAL & ARCHITECTURAL WORKS(INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.</p>				
<p style="text-align: center;">TENDER NO.- PSER:SCT:KGN-C2094:21</p>				
<p style="text-align: center;">SCH-2 : PRICE BREAK-UP</p>				
ST NO.	ITEM DESCRIPTION	UNIT	QUANTITY	WEIGHTAGE
iii	600 mm diameter pile	EACH	4	0.00143117
iv	760 mm diameter pile	EACH	4	0.00150035
b	For lateral load test			
iii	600 mm diameter pile	EACH	4	0.00104898
iv	760 mm diameter pile	EACH	4	0.00130579
c	For tension/uplift test			
iii	600 mm diameter pile	EACH	4	0.00076104
iv	760 mm diameter pile	EACH	4	0.00094587
2512	Conducting routine load test on single job pile as specified in accordance with IS 2911 (Part-4) including preparation of pile head for testing, necessary excavation, providing all arrangements of loading, unloading, test equipments/accessories, jacks, recording of results, labour, submission of test report etc but excluding the cost of installation of job pile complete as per specification, drawing and as directed by the engineer-in-charge for the following.			
a	For vertical compression test by maintained load method			
iii	600 mm diameter pile	EACH	16	0.00591821
iv	760 mm diameter pile	EACH	3	0.00138338
b	For lateral load test			
iii	600 mm diameter pile	EACH	16	0.00381448
iv	760 mm diameter pile	EACH	3	0.00089031
A2513	Carrying out low strain pile integrity test on 600mm/ 760mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc but excluding the cost of installation of job pile all complete as per specification and as directed by the engineer-in-charge.	EACH	3542	0.00395870
2600	LEVELING & GRADING: Levelling & grading works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge.			
2601	Cutting of trees having girth more than 300 mm measured at a height of 1m above ground level including removal of roots, stacking the serviceable material like trunks,branches etc at specified area within the plant boundary and disposal of unseviceable parts/materials within a lead upto 1km etc all complete.			
a	300 mm upto 600 mm girth.	Nos	5	0.00000129
b	601 mm upto 1200 mm girth.	Nos	10	0.00001157
c	1200mm and above.	Nos	15	0.00008080
2602	Earth work in stripping of top soil upto a maximum depth of 0.30m below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300 mm including roots and organic materials etc for leveling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means, disposal of stripped materials within a lead upto 1km etc all complete as per specification, drawing and as directed by the engineer-in-charge.	SQM	500	0.00000709
2603	Earth work in excavation upto any depth below ground level in all types of soil including moorum, ash which can be excavated by any means for grading including setting out, levelling, dewatering (wherever required), dressing the sides & bottom, levelling to grade, all lifts, ramming/compacting the excavated bottom/graded surface, stacking/disposal of surplus excavated materials within a lead upto 1km, spreading/levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.	CUM	200	0.00001120
2608	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 300mm loose thickness so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII) with selected approved soil/soft rock directly from excavation within a lead upto 1km and compacted as specified including dewatering if required, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete as per specification, drawing and as directed by the engineer.	CUM	200	0.00000403
	TOTAL			1.000000000

FORMAT FOR NO DEVIATION CERTIFICATE
(To be submitted in the bidder's letter head)

BHARAT HEAVY ELECTRICALS LIMITED,
Power Sector - Eastern Region,
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,
Kolkata – 700 091

Sub	No Deviation Certificate.	
Job	CIVIL, STRUCTURAL & ARCHITECTURAL WORKS (INCLUDING PILING WORKS) FOR FGD SYSTEM AREA OF 4 X 210 MW, STAGE-I & COMMON SYSTEM KAHALGAON STPP, BIHAR.	
Ref	1.0	Tender no PSER:SCT:KGN-C2094:21.
	2.0	BHEL's NIT, vide reference no PSER:SCT:KGN-C2094:8405 Date: 20-01-2021.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:KGN-C2094:TCN-01, dated 03-02-2021.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:KGN-C2094:TCN-02, dated 06-02-2021.
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:KGN-C2094:TCN-03, dated 11-02-2021.
	6.0	BHEL's TCN-04, vide reference no PSER:SCT:KGN-C2094:TCN-04, dated 12-02-2021.
	7.0	BHEL's TCN-05, vide reference no PSER:SCT:KGN-C2094:TCN-05, dated 12-02-2021.
	8.0	All other pertinent issues till date.

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted/uploaded offer/documents in accordance with tender instructions with acceptance of the terms & conditions of the tender by us and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized
representative of the bidder)