

VOLUME-III PRICE SCHEDULE, REV-00	
Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.	
TENDER NO. PSER:SCT:SDG-C2085:20	
PREAMBLE	
SL NO	DESCRIPTION
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 anywhere 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 tenderer 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 before submission of his bid/offer. No claim whatsoever due to lack of knowledge of site conditions shall be entertained after award of the work.
13	No splitting of the job is envisaged unless the same is specifically indicated in the TCC/Vol-1F. 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. The same modality shall be applicable for other item rate service contracts where item with same description is repeated in different schedules.
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. PVC/escalation is not payable for these Non-scheduled items.
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. No idling charge whatsoever (either for labour or any other resources) is payable by BHEL for any reason whatsoever.
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 charges 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-00

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TENDER NO. PSER:SCT:SDG-C2085:20

SCH-1 : TOTAL PRICE

SL NO	DESCRIPTION	PRICE SCHEDULE REF	TOTAL QUOTED PRICE (IN RS)
1.0	TOTAL PRICE FOR CIVIL, STRUCTURAL & ARCHITECTURAL WORKS FOR MAIN PLANT & BOP (EXCLUDING PILING AND LEVELLING & GRADING WORK) FOR 1X660 MW WBPDCL SAGARDIGHI TPP EXTENSION UNIT NO. 5	SCH 2 - BREAK UP OF TOTAL PRICE	<u>IN FIGURES:-</u>
			<u>IN WORDS:-</u>

NOTE

1.0	Bidder shall quote total price for total price of SCH-2- Part only at sl no 1 above. All other amounts/ rates of each item of works in respective schedules/ parts will be derived based on allocated percentages. As such, any uncalled figure/ amount noted at any other place/ schedule of Volume-III will not be reckoned & will stand null & void.
2.0	Bidder to note that total price at sl no 1.0 above shall be considered for evaluation & awarding. As such grand total price should be complete in all respect for the full scope defined and considering all terms and conditions.
3.0	Bidder to note that SCH-2 is Break- up of Total Price.
4.0	Bidder to note that SCH-3 covers Service of respective items, unless specified otherwise in the description of items.
5.0	Bidder to note that SCH-4 covers Supply of respective items, unless specified otherwise in the description of items.
6.0	Bidder's quoted total price at Sl. no 1 above respectively shall be apportioned into amount of various items of works based on allocated percentages against respective item, in respective schedules/ parts. As such, bidder shall not indicate/ quote any amount/ rate in these schedules/ parts and any amount/ rate quoted against any item shall not be taken into cognizance/ account and offer may be liable for rejection.
7.0	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 after rounding off.
8.0	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 Sl No.9 below.
9.0	Unit rates of each item of works of respective schedules/ parts will be derived by dividing derived amount by corresponding quantities. In deriving the unit rates of each item in this manner, figures only upto 4 decimal places will be taken into account. Any adjustment, if required, due to such methodology, will be effected in final bill.
10.0	Successful bidder shall draw a schedule of quantities of various items of work of SCH-4 and obtain BHEL's approval/ clearance in writing before procurement, supply, etc.
11.0	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.
12.0	Price format shall not be changed by bidder in any case and it may lead to cancellation of their offer.
13.0	The quantity of items may vary during execution mainly due to actual requirement etc. The unit rates work out from the overall amount quoted & accepted by BHEL shall be considered and no separate unit rates shall be allowed. Unit rates shall be valid throughout the contract period.

VOLUME-III
PRICE SCHEDULE, REV-00

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TENDER NO. PSER:SCT:SDG-C2085:20

SCH-2 : BREAK UP OF TOTAL PRICE

SL NO	DESCRIPTION	PRICE SCHEDULE REF	WEIGHTAGE
1.0	SERVICE	SCH 3 -SERVICE	0.91583642
2.0	SUPPLY	SCH 4 -SUPPLY	0.08416358
3.0	TOTAL		1.00000000

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PRICE SCHEDULE, REV-00

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TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
100	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 (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1Km, spreading/levelling of disposed materials etc all complete for following depths below ground level. [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	1,27,000	0.00999764
b	Depth exceeding 2 m but not exceeding 4 m	CUM	88,000	0.00865938
c	Depth exceeding 4 m but not exceeding 6 m	CUM	40,500	0.00498803
d	Depth exceeding 6 m but not exceeding 8 m	CUM	6,000	0.00092561
e	Depth exceeding 8 m but not exceeding 10 m	CUM	1,200	0.00022245
f	Depth exceeding 10 m but not exceeding 15 m	CUM	20	0.00000427
102	Extra over ST No. 101 for dewatering of ground water by well point method as per IS 9759.	CUM	7,200	0.00024838
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 250 mm in loose 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	1,73,500	0.01035379
A109	Extra over ST No. 101 and 103 to 108 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.	CUM	89,200	0.00056629

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TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
A111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 200 mm loose thickness and compacted so as to achieve at least 85% 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	3,000	0.00371198
A200	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: (RMC SHALL BE PROVIDED BY BHEL AT BATCHING PLANT IN PROJECT PREMISES . TRANSPORTATION FROM THE BATCHING PLANT UP TO THE POURING POINT SHALL BE UNDER THE SCOPE OF CONTRACTOR)			
A201	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	45	0.00004011
A202	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	8,213	0.00732051
A203	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	450	0.00040110
A204	Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete.	CUM	1,800	0.00160440
A205	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	37,800	0.03369234
b	M 30 Grade	CUM	2,700	0.00240660
Ad	M 20 Grade	CUM	6,300	0.00561539

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TENDER NO. PSER:SCT:SDG-C2085:20

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ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
A206	Providing and laying Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size 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	7,200	0.00770202
b	M 30 Grade	CUM	675	0.00072206
AA207	Providing and laying Design Mix cement concrete confirming to IS:456 & IS 10262-2009 for reinforced concrete works of grade mentioned below in machine foundations for TG, Gas Turbine, ID/FD/PA fans, BFP, Coal mills at all elevations below/above finished floor level except TG deck, BFP top 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	6,100	0.00652532
b	M 35 Grade	CUM	900	0.00096275
AA208	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 & BFP foundation at all levels including addition of suitable plasticizers 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%.			
a	M30 grade	CUM	950	0.00101624
b	M35 grade	CUM	1,300	0.00139064
A210	Extra over ST Nos. 205 to AA207 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	7,000	0.00245307

VOLUME-III
PRICE SCHEDULE, REV-00

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TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
A211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. (Payment of welded wire mesh, chicken wire mesh shall be made separately)			
b	M25 grade	CUM	950	0.00101624
A212	Screeed 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)	CUM	144	0.00017717
A213	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/perforated drain covers/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	315	0.00109508
b	M 30 grade	CUM	315	0.00109508
A214	Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in water retaining/conveying structures including addition of suitable plastisizer cum waterproofing cement additives confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades. Watertightness is to be ensured including structural grouting if required.			
b	M 30 grade	CUM	5,938	0.00582200
A220	Providing & laying Plum cement concrete 1:3:6 with 75% graded metal of maximum size 40 mm and 25%plums of maximum size 150 mm.	CUM	595	0.00053034

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TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
B200	CONCRETE WORK: Transportation from Batching Plant and placing concrete work including cost of labour, materials (unless otherwise specified in BOQ/ contract specification) and equipment for handling, transportation, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following. (CONCRETE WITH CEMENT, AGGREGATES, REQUIRED ADDITIVES/PLASTICIZER/SUPERPLASTICIZER ETC. AND INCLUDING TRANSPORTATION, POURING/LAYING, COMPACTION AND CURING ETC. ALL COMPLETE IS IN THE SCOPE OF CONTRACTOR)			
B201	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	5	0.00001461
B202	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	913	0.00282188
B203	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	0.00017142
B204	Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete.	CUM	200	0.00073299
B205	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	4,200	0.01498581
b	M 30 Grade	CUM	300	0.00108318
Ad	M 20 Grade	CUM	700	0.00242345

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ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
B206	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	800	0.00299715
b	M 30 Grade	CUM	75	0.00028417
B211	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)			
b	M25 grade	CUM	106	0.00038589
B212	Screeed 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)	CUM	16	0.00006082
B213	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/perforated drain covers/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	35	0.00021536
b	M 30 grade	CUM	35	0.00021685
B214	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 plasticizer cum waterproofing cement additives confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades. Watertightness is to be ensured including structural grouting if required.			
b	M 30 grade	CUM	313	0.00133644

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ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
C200	MISC. CONCRETE RELATED WORKS (Supply of cement is in scope of contractor)			
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	20	0.00001455
b	Reinforced cement concrete of all grades	CUM	20	0.00002141
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	200	0.00000635
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	200	0.00000051
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	200	0.00002971
219	Providing and applying curing compound (water based) of approved make where ever required as per manufacturer's specification.	SQM	1,000	0.00006349
300	FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering etc. complete as per drawing, specifications and as per direction of engineer in charge for the following:			
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	1,07,500	0.03473749

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
302	Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface above finished ground floor level for columns, beams, suspended 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	39,000	0.01505360
303	Fairface Formwork with good quality water proof ply wood of minimum 18mm thickness and smooth surface for TG superstructure (above base raft level for TG columns connecting beams & topdeck) including preparation of scheme, designing, submission and approval of staging drawing with sufficient props, braces and ties at every tier of height of approx. 4m for all heights complete including chamfering of edges, deshuttering as per drawing, specification, and instruction of engineer in charge..	SQM	1,300	0.00266244
304	Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.			
a	Upto 150 mm depth	EACH	100	0.00001638
b	Pockets of depths more than 150mm and upto 300 mm depth	EACH	50	0.00001460
c	Pockets of depths more than 300mm and upto 600 mm depth	EACH	50	0.00002724
d	Pockets of depths more than 600mm and upto 1000 mm depth	EACH	25	0.00002187
e	Pockets of depths more than 1000mm and upto 1500 mm depth	EACH	10	0.00001283
f	Pockets of depths more than 1500mm and upto 2000 mm depth	EACH	10	0.00001701
305	Extra over item no.301 and 302 for curved form work for foundations, footings, beams, walls, trenches, domes, arches etc as per specification.			
a	Extra for Curve Shuttering for Item No. 301	SQM	200	0.00001295
b	Extra for Curve Shuttering for Item No. 302	SQM	600	0.00004647
400	REINFORCEMENT WORK : Reinforcement work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge for the following::			

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
401	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. (Cost on account of supply of mild steel reinforcement is payable separately under ST S401 of SCH-4 of Vol-III: Supply)	MT	50	0.00051671
402	Straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming to IS:1786 including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores, unloading of materials etc. complete all as per specifications, drawings and as directed by Engineer. (BHEL WILL BE PROVIDED REINFORCEMENT STEEL AS FREE OF COST AS PER TCC)	MT	8,250	0.06451165
405	Fixing of Rebar in existing concrete surface by inserting reinforcemnet bar with Epoxy based suitable bonding compound of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non destructive test as directed by engineer shall beconducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. 402 as applicable.			
a	12mm Reinforcement bar	EACH	50	0.00001171
b	16mm Reinforcement bar	EACH	20	0.00000743
c	20mm Reinforcement bar	EACH	25	0.00001313
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 confirming to IS:1786 including , labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.(Agency has to supply reinforcement bar couplers).			
a	12mm dia	EACH	10	0.00000048
b	16mm dia	EACH	10	0.00000060
c	20mm dia	EACH	10	0.00000076
d	25mm dia	EACH	25	0.00000243
e	28mm dia	EACH	25	0.00000414
f	32mm dia	EACH	25	0.00000438
g	36mm dia	EACH	25	0.00000641

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
h	40mm dia	EACH	25	0.00000827
A406	Providing and Fixing parallel threaded reinforcement couplers for mechanical splices of rebars (TMT/ CRS TMT) for concrete reinforcement including supply of couplers as per IS: 16172 made out of EN8D grade high strength alloy material , threading on rebars to be coupled with coupler, enlargement at connection by forging, protecting the prepared reinforcement bars, fitting & fixing of couplers under specialized supervision, quality tests & checks (for couplers and coupled joints) etc. all complete as per direction of Engineer in charge. The couplers shall match to the properties of rebars of grade equal to Fe 550 D of IS 1786. The cost shall include for all works and tests including moblisation, demobilisation, loading/unloading of required plant/ machinery at site for threading & forging works, tools & tackles, labour & supervision, consumables and all incidental expenses for satisfactory execution of the work . (No deduction for labour and binding wire saved for not providing lap length shall be made).			
a	Coupler of class "H" for 16 mm diameter reinforcement bar.	EACH	300	0.00001969
b	Coupler of class "H" for 20 mm diameter reinforcement bar.	EACH	100	0.00000838
c	Coupler of class "H" for 25 mm diameter reinforcement bar.	EACH	300	0.00003205
d	Coupler of class "H" for 28 mm diameter reinforcement bar.	EACH	100	0.00001823
e	Coupler of class "H" for 32 mm diameter reinforcement bar.	EACH	100	0.00001927
f	Coupler of class "H" for 36 mm diameter reinforcement bar.	EACH	50	0.00001411
A407	Welding of lap joints of steel reinforcements of Corrosion Resistant thermo-mechanically treated reinforcement steel (High Strength Deformed steel bars) conforming to grade Fe-500 of IS: 1786 (Latest) including cost of welding electrodes, labour, tools and plants etc. complete as permitted and directed by Engineer. Measurement shall be done for the number of joints welded comprising of weld deposition of 2.5d length each on both side of lap joint (i.e total 5d length of weld deposition). Here, "d" is the diameter of reinforcement bar.			
a	For d=16 mm	EACH	100	0.00000460
b	For d=20 mm	EACH	50	0.00000293
c	For d=25 mm	EACH	100	0.00000748
d	For d=28 mm	EACH	50	0.00000638
e	For d=32 mm	EACH	50	0.00000675
f	For d=36 mm	EACH	50	0.00000987

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
500	Roof Treatment works: Roof treatment works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, curing, sampling, testing etc at all level as per specification, drawings and as directed by engineer - in - charge for the following: (Supply of cement is in scope of contractor)			
502	Providing and laying underbed grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 15 mm including preparation of surface, batching, mixing, leveling etc. all complete.	SQM	3,500	0.00025451
A505	Providing and laying rigid insulation (expanded/extruded polystyrene blocks) as per relevant IS Code in suitable panels over roofs followed by a layer of 15 mm thick cement sand plaster 1:4 (1 cement: 4 coarse sand) and providing of expansion joint at intervals and filling with sealant in both directions as per the recommendation of manufacturer. The insulating properties shall be such that the thermal conductivity shall not exceed 0.026 Kcal m/m deg C. The block shall be strong enough to withstand without deformation the workload and standard loads expected on the roof. Cost shall include making of fillets, cleaning & preparation of surface, expansion joints at suitable intervals etc all complete for following.			
b	50 mm thickness of rigid insulation	SQM	3,500	0.00173537
506	Providing and applying PU based water proofing treatment with one coat of polyurethane or any other equivalent material based primer with an application rate of minimum 6 sq.m per litre and two successive liquid coatings of high solids content urethane pre-polymers or equivalent material based finish coats as per relevant IS/ASTM standards to form an elastomeric membrane with overall dry film thickness 1.5 mm subject to minimum 500 gm/sqm/coat application rate. Item includes surface preparation, polyscrim cloth /fabric, polymerised mortar base preparation, etc all complete as per specifications and directions of engineer in charge.	SQM	10,000	0.00375832
A 510	Providing and laying cement concrete chequered flooring tiles of 20 mm thickness and size 600x600 mm conforming to IS 13801 over the under bed grading plaster with fine joints including sealing of joints (silicon/elastomeric sealant) and providing expansion gap in both directions filled up with (silicon/elastomeric) joint sealant, including underbed 20mm thick 1:4 cement mortar (as per drawings) filled up with (silicon/elastomeric) joint sealant etc all complete as per specification. (Water proofing paid elsewhere), (including cost of cement for tiles making)	SQM	13,500	0.00617076
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	1,35,000	0.02056919

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
517	Providing and laying foam concrete blocks in the toilets/sunken slab etc. complete as directed by engineer in charge.	CUM	50	0.00019807
A 519	Providing and laying protective slope with 25mm average thick (thickness will depend upon the required slope and span of the building) M20 grade screed mixed with polypropylene fibres (RECRON or equivalent) and admixed with integral liquid waterproofing compound conforming to IS: 2645. Green stage saw cutting on the screed will be done in panels (3mx4m) with grooves 10mmx10mm. Finally the groove will be sealed with elastomeric sealant etc all complete as per specification.	SQM	4,500	0.00147413
B519	Providing and laying protective slope with 75mm average thick (thickness will depend upon the required slope and span of the building) M20 grade screed mixed with polypropylene fibres (RECRON or equivalent) and admixed with integral liquid waterproofing compound conforming to IS: 2645. Green stage saw cutting on the screed will be done in panels (3mx4m) with grooves 10mmx10mm. Finally the groove will be sealed with elastomeric sealant etc all complete as per specification.	SQM	9,000	0.00356533
A 520	Providing and laying 120-150 GSM geotextile (non-woven polyester) over the Elastomeric coating etc all complete as per specification. (Cost of Elastomeric coating shall be paid separately).	SQM	13,500	0.00068564
A 521	Providing and laying minimum 1.5mm thick sealer coat over insulating foam, which is a single component cold applied elastomeric waterproofing coating with >=500% elongation confirming to ASTM C836 applied by a spray/brush/roller in 2 coats etc all complete as per specification. Water ponding/flood test is to be conducted after application and water shall be filled up and retained for at least 24 to 48 hours as per specification.	SQM	10,000	0.00330123
A 522	Providing and laying polyurethane foam insulation spray applied an average 40 mm thick two component Hydro fluorocarbon(CFC free), polymeric M.D.I based closed cell(96-98% as per ASTM D2856) multilayer, waterproof, mixed in a ratio of 1:1 by volume with a nominal core density of 45-50 Kg/m ³ as per ASTM D1622 , and a thermal conductivity of 0.023 W/m.k at 25 degree mean temperature as per ASTM C518/91 possessing waterproofing properties as per ASTM C-518/91 ,ASTM C-272 and complying to Fire resistance Class B2 as per DIN 4102 including Compressed air cleaning to make the RCC surface free of dust, debris, laitance etc. and repairing cracks by cutting and making V-groove in 25x25 mm, with polymer modified mortar, filling the groove with Cement Mortar (1:3) mixed with polymer10% by weight of cement etc all complete as per specification.The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane. The testing of material shall be done from authorised lab same shall be furnished before execution of work,as directed by engineer in charge.Performance Guarantee should be given by the manufacturer after completion of the water proofing work for 20 years for material and workmanship.	SQM	10,000	0.01041157

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
A 523	Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer 4 mm thick(min.5kg/sqmt) water proofing membrane, black finished reinforced with non-woven polyester matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 litre/sqm by the same membrane manufacture of density at 25°C, 0.87-0.89 kg/ litre and viscosity 70-160 cps. Over the primer coat the layer of membrane shall be laid using Butane Torch and sealing all joints etc., and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under: Joint strength in longitudinal and transverse direction at 23°C as 650/ 450N/5cm. Tear strength in longitudinal and transverse direction as 300/250N. Softening point of membrane not less than 150°C. Cold flexibilities shall be up to -2°C when tested in accordance with ASTM, D - 5147. APP membrane shall conform to UEAtc,ASTM D146, DIN52123, ASTM D36, ASTM D5, UEAtc, ASTMD 5147, ASTM D4799. The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane. The testing of material shall be done from authorised lab same shall be furnished before execution of work,as directed by engineer in charge. Performance Guarantee should be given by the manufacturer after completion of the water proofing work for 20 years for material and workmanship.	SQM	3,500	0.00127986
A524	Providing and laying water proofing treatment for wet areas like toilets,kitchen,pantry of sunken slab etc. with polymer based water proofing material like tapecrete ,cico or equivalent all complete with water ponding test as per IS Code and as directed by engineer in charge.	SQM	100	0.00006279
A525	Providing and laying an angular fillet around parapet wall junction at roof leve of min.50mm x 50mm, shall be trowel applied in cement-sand mortar(cement, sand mortar shall be supplied by you) in 1:3 proportion. A latex based bonding agent should be added (10% by weight of cement) and also a glass cloth must be inserted while the angle fillet is being constructed.	RM	1,700	0.00018131
600	JOINTS AND FILLERS: Joints & fillers including all labour, material, equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge 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	100	0.00003492
b	20 mm wide joints.	SQM	200	0.00008786
c	25 mm wide joints	SQM	262	0.00017432
d	50 mm wide joints	SQM	1,282	0.00171322
602	Supplying and installation of Dura board HD100 or its equivalent as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.			
a	12 mm wide joints.	SQM	25	0.00000882
b	20 mm wide joints.	SQM	100	0.00005726
c	25 mm wide joints	SQM	100	0.00006685

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
d	50 mm wide joints	SQM	50	0.00006380
603	Providing and applying polysulphide based sealant conforming to IS:12118 in joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:			
a	25mmX25mm	RM	100	0.00003796
b	50mmX25mm	RM	550	0.00040050
604	Supplying and filling in position hot applied bitumin sealing compound (Grade A) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.			
a	10mm X 40mm	RM	50	0.00000190
b	12mm X 25mm	RM	200	0.00000660
c	20mmX25mm	RM	200	0.00000876
605	Supplying and installation of commercial quality of expanded polystyrene products from reliable manufacturers as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.			
a	12 mm wide joints.	SQM	50	0.00000175
b	20 mm wide joints.	SQM	200	0.00001003
c	25 mm wide joints	SQM	200	0.00001295
d	50 mm wide joints	SQM	100	0.00001194
610	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)			
b	230 mm wide and 8 mm thick	RM	80	0.00001499
d	230 mm wide and 6 mm thick	RM	800	0.00012494
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	500	0.00024474
700	MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
701	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. (Cost on account of supply is payable separately under ST S701 of SCH-4 of Vol-III: Supply)	MT	225	0.00388423

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
702	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. (Cost on account of supply of mild steel bolt assembly, nuts, lock nuts, washer, anchor plates, stiffener plates, protective tape, pipe sleeves, templates etc. payable separately under ST S702 of SCH-4 of Vol-III: Supply)	MT	40	0.00081179
703	Same as above items 701 & 702 with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.			
a	Mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc.	MT	25	0.00030755
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	2	0.00002321
A703	Fixing of embedments, inserts, pipe sleeves, angle pieces, anchor bolts of various diameters, plates of dimensions as required etc. including scaffolding, setting in position, transportation from BHEL site stores to work spot etc. all complete.	MT	50	0.00061511
704	Supply, 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	2,800	0.00017065
b	PVC pipes / conduits of all diameters	Kg	700	0.00011999
c	UPVC pipes / conduits of all diameters	Kg	400	0.00011402
d	Expansion anchor fasteners (galvanised) of HILTI make(HUD-1 Universal Fasteners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:			
i	8mm Dia	EACH	75	0.00000143
ii	10mm Dia	EACH	75	0.00000176
iii	12mm Dia	EACH	75	0.00000210
iv	14mm Dia	EACH	75	0.00000324
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	75	0.00000652
ii	HST M10	EACH	75	0.00000957
iii	HST M12	EACH	75	0.00001428

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
iv	HST M16	EACH	75	0.00002690
v	HST M20	EACH	75	0.00005347
vi	HST M24	EACH	75	0.00010213
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.	EACH	96	0.00007344
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	71	0.00009371
707	Laying and fixing rails(52kg/rm) and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete. (Cost on account of supply is payable separately under ST S707 of SCH-4 of Vol-III: Supply)	MT	86	0.00195641
800	GROUTING: Grouting including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, roughening surface, cleaning, ramming, curing etc. at all level, drawings and as directed by engineer - in - charge for the following: (Supply of cement is in scope of contractor)			
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	100	0.00003840
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	20	0.00027817
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	10	0.00012855

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
804	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with ConbextraGP-1 or equivalent as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	48	0.00127477
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	2	0.00005988
806	Providing Chemical (epoxy) injection grouting with pressure pump for water retaining concrete structures conforming to IS:6494, including fixing nozzles, cost of approved chemical, admixture, curing etc. all complete . Payment shall be made as per the consumption of chemical grout.	Kg	100	0.00006012
900	DOORS & WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
901	Providing and fixing wooden frame conforming to IS 4021 made of best quality seasoned CP teakwood free from large or loose knots, cracks or other defects including sand paper smoothening, hold fasts, beading, primer and finish painting / polishing etc. all complete with proper wood joinery, accurately set to required lines or levels and rigidly secured in place.	CUM	5	0.00071427
902	Providing and fixing teak wood frame panel door shutter as per IS 1003 with 35 mm x 150 mm vertical rail & 35mm x 125 mm horizontal rail and 12 mm thick interlocked panels of teakwood with proper wood joinery including beading, preperation of working drawings,godrej or equivalent make mortice lock with handels on both sides,approved ISI mark anodised fittings like door stopper,300mm long tower bolts,16x300mm long aldrops ,125mm long handles on both sides etc. butt hinges, sliding bolt ,knobs, (all fitting shall be anodised aluminium color dyed), screws, primer and finish painting / polishing etc. all complete.	SQM	10	0.00005577

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
903	Providing, fitting and fixing solid core flush door shutter as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldihyde synthetic resin, particle board core conforming to IS 3087 type I, 35x12 mm thick teakwood beading all around including preparation of working drawings. godrej or equivalent make mortice lock with handles on both sides,approved ISI mark anodised fittings like door stopper,300mm long tower bolts,16x300mm long aldrops ,125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish synthetic paint over primer, screws etc. all complete as per drawing, specification and instruction of engineer in charge. with commercial faces and teak wood edges.	SQM	5	0.00002357
A903	Providing and fixing factory made Solid core wooden flush doors as per IS 2202 part-I & II, 35mm thick homogenous particle board bonded with BWR grade phenolformaldihyde synthetic resin conforming to IS 848, particle board core conforming to IS 3087 type I, 35x12 mm thick teakwood beading all around including preparation of working drawings. godrej or equivalent make mortice lock with handles on both sides,approved ISI mark anodised fittings like door stopper,300mm long tower bolts,16x300mm long aldrops ,125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish synthetic paint over primer, screws,with commercial faces and teak wood edges.etc. all complete as per drawing, specification and instruction of engineer in charge.	SQM	28	0.00014518
A904	Providing and Fixing single or double steel door shutters with 46mm 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 resin bonded mineral wool / honey comb core (density as per specification), all fittings, Godrej,dorma,geze or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.	SQM	236	0.00166126
A906	Providing and fixing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and doors, frames, mullions, transom etc. shall be anodized in a bath of sulphuric acid to provide a clear coating of minimum 0.6 mm thickness. The anodized materials shall then be sealed by immersing in boiling water for 15 minutes. A protective transparent coating shall be applied to the sections before shipment from the factory. Where required factory made evenly baked powder coated coloured aluminium extruded sections shall be used. DFT shall not be less than 0.8 mils. Colour shall be as per Colour Schedule or as per instruction of the Engineer-in-Charge fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing and frame shall be paid separately)	SQM	153	0.00058571

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
A907	<p>Providing and Fixing fire rated hollow metal steel doors (single or double shutter) as per IS 3614 Part-1&2 of pressed galvanised steel conforming to IS 277 with Door shutters of minimum 46 mm thick with , consisting of vertical styles, lock rail, top rail 100 mm wide, bottom rail 200 mm wide, fully flush double skin door with or without vision panel, suitably mounting on door frame (143X57 mm). Door frame shall be manufactured from minimum 1.6 mm (16 gauge) thick SWG G.I. sheet (zinc coating not less than 120gm/sqm) duly filled FR insulation material. The frame is fitted with intumuscent fire seal strip of size 10 x 4 mm (minimum) all-round the frame and fixing with dash fastener of approved size and make, including applying a coat of approved brand fire resistant primer. Frames shall be metered and field assembled with self tabs. The internal construction of the door should be rigid reinforcement pads for receiving appropriate hardware. All doors shall be factory prepared for receiving appropriate all fire rated hardware and provided with necessary reinforcement, stainless steel ball bearing hinges, locks and door closers, panic bar, panic trim, vision panel with fire rated glass. For pair of doors astragals shall be provided on the meeting stile for both active and inactive leaf. The door leaf and frame shall have passed minimum 250 hours of salt spray test and shall be finished with etched primer coating, stove zinc phosphate primer and thermosetting polyurethane aliphatic grade paint of approved colour including spot welded in position at not more than 150mm on centers including all fittings, shop painting, filled with resin bonded honeycomb core as infill material all complete as approved by Engineer-in-Charge, shall be fire proof as per specification and NBC requirements etc. The door shall be tested at CBRI or ARAI for maximum rating of 2 hrs with vision panel and its Fabrication drawing shall also be approved by CBRI, Roorkee.</p> <p>Payments terms - a) on receipt of materials at site - 60%; b) Erection & fixing - 40%</p> <p>Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity</p>	SQM	199	0.00189440
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)			
a	Openable type	SQM	50	0.00009510
b	fixed type	SQM	150	0.00019160

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metallic protection etc. including preparation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid separately).Weight of aluminium section only shall be measured.	Kg	19,401	0.00913903
A910	Providing Fabricating, supplying and fixing of Aluminium composite panel cladding (ACP) in pan shape in solid or metallic colour of approved shades made out of 4mm thick aluminium composite panel (weight of panel should be 7.5 kg/sqmt) material consisting of 3mm thick FR grade Class B as per EN 13501,mineral core sandwiched between two Aluminium sheets (each 0.5mm thick).The aluminium composite panel cladding sheet shall be coil coated, with Kynar 500 based PVDF conforming to AAMA 2605 or Lumiflon based fluoropolymer resin coating of approved colour and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc. The top coated surface of ACP shall comply with the "specification for coated coil for the exterior building application" issued by ECCA (European Coil Coating Association). The aluminium composite panel top and bottom skin should conform to Aluminium Alloy 5005 (AlMg 1) marine grade series and H 22/24 temper with mechanical properties confirming to EN 485-2 standard. The ACP product must conform to either BS 476 part 6 & 7 or ASTM E 84 standards along with EN-13501-1. The manufacturer must furnish Class 1A certificate for this ACP produced in the plant from which it is going to be supplied. The panel shall be designed for 12mm groove in horizontal & in verticals with close joint system. Vertical & Horizontal groove shall be filled by non-staining high performance weather sealant. ACP panel shall have sub frame all around panel and aluminium stiffener profile as per structural requirements. The finished surface of ACP shall be protected with a self-adhesive (Rubber based) peel off foil with 70 microns thickness white or black, tested to withstand up to 6 months' exposure to local weather condition without losing the original peel off characteristic or causing stain or other damages on the coated surface of the aluminium composite panel. Installation of ACP Coping/facia at terrace level sealing the top gap of the parapet wall and ACP Panel shall have GI stiffeners below with required aluminium grid work with necessary MS HDG / aluminium alloy brackets & SS fasteners.2nd barrier of 1mm thk GI sheet laid continuously below the coppering to seal the parapet wall. Overlap of GI sheet shall be properly sealed with weather sealant.	SQM	2,700	0.00859381

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
	<p>All shade approval shall be as per Architect's Approval as per approved sample from Alucobond Plus, Aludecor, Reynobond or equivalent. The system shall be designed to withstand a wind pressure of 200kg/Sqm or as per design requirement and shall be fixed to the Masonry/RC walls or aluminium frame with necessary clamps, brackets and anchor fasteners etc. All clamps and brackets shall be Hot dip galvanized minimum 80 microns thick and shall conform to IS: 4759-1996. The extruded aluminium section shall be anodized in approved colour with a anodic coating of minimum 20 microns. Extruded section shall be 6063 T5 or T6 alloy conforming to ASTM B221. Any other festering straps, nuts, bolts, rivets, washers, etc. shall be in stainless steel SS316 grade. EPDM gaskets, open cell polyethylene backer rods, weather sealant etc. shall be provided as per requirement. Item shall include aluminium base frame with all fixing arrangements to wall/RC members, fastening material and hardware(festering straps, nuts, bolts, rivets, washers etc.), EPDM gaskets, open cell polyethylene backer rods, weather sealant, scaffolding, approach to all height, material handling, transportation, labour, T&P, preparation of working drawings etc.all complete as per drawing, specification & instructions of engineer in charge. Measurement of payment shall be outer finished area of ACP panel.</p> <p>Payments terms - a)on receipt of materials at site - 60%; b) Erection & fixing - 40%</p> <p>Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity</p>			
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	80	0.00008121
b	Floor mounted Hydraulic door closers as per IS 6315	EACH	80	0.00020909
A912	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 ,galvanising,paintings etc all complete as per specifications.	Kg	2,361	0.00023982
A913	<p>Fixing in position metal rolling shutter and rolling grill type shutter as per specification made from 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 shall be designed to withstand a wind load of minimum 200 Kg/m² without excessive deflection as per specification and 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 riveted with stiffening angles.(partly coiled and lath/full lath).The guides shall be either rolled or pressed deep channel sections of minimum 75 mm and 25 mm wide fitted with necessary fitting and fixtures.</p> <p>(Cost on account of supply is payable separately under ST S913 of SCH-4 of Vol-III: Supply)</p>			
b	Mechanically Operated	SQM	91	0.00017645
c	Electrically and Mechanically operated	SQM	312	0.00067064

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
A914	Supply and Fixing solid core PVC frame with PVC door shutter minimum 30mm thick and shall be factory fabricated made from min.5 mm PVC sheet.PVC Door Frames shall be made from min.50 x 47 mm section and fabricated from 5 mm PVC sheet having density of 600 kg./cum.The weight per running metre of the door frame including reinforcement should be a minium of 1.5 kg./sqm. Frames shall have smooth surface, without any warping or bending in any member. All the parts of the door frame are to be jointed to each other using solvent adhesive conforming to IS 14182.The sheets used for frame and shutters may be in plain colour, printed design or prelam veneer shade as approved sample, including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	56	0.00008490
B914	Providing and fixing solid core FRP(Fibre Glass Reinforced Plastic) frame with FRP door shutter minimum 30mm thick and shall be factory fabricated .FRP Door Frames shall be made from min.90 X 45 mm section made of laminate of thickness of 2 mm and shall be filled with wooden blocks of exterior grade MDF or seasoned and treated hard wood inside the laminate in all the three legs of the frame. Frames shall have smooth surface, without any warping or bending in any member.The shutter at suitable place to hold fittings and fixtures such as aldrops, tower bolt, handle, sliding door bolt, mortice lock etc.FRP door shall be manufactured conforming to IS 14856,The sheets used for frame and shutters shall be free from any visible defects such as small pores, crazing, blistering, wrinkling, impurities, defective impregnation, colour bolts and aggregate defects, may be in plain colour, printed design or prelam veneer shade as approved sample, including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	20	0.00005296
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.			
Ac	6 mm thick clear float glass	SQM	106	0.00011178
d	6 mm thick wired glass	SQM	1,000	0.00107290
e	6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	137	0.00017795
f	4 mm thick ground glass	SQM	161	0.00014248
Ag	6 mm thick tinted heat reflecting Low-E coated type float glass panels shall have properties like VLT = 35 to 50%, external reflection=6 to 15%, internal reflection=8 to15%, solar factor=0.36 to 0.43, U value=2.8 to 3.0 W/sqm K.parameters varies as per specification.	SQM	500	0.00071468
Ai	Two nos. 6 mm thick hermetically sealed DGU clear toughened float glass and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured). Double glazed panels with glass having properties like-VLT >30 to 45%, external reflection=8 to 20%, internal reflection=15 to 30%, solar factor=0.26 to 0.29, U value=1.6 to 1.8 W/sqmK parameters varies as per specification.	SQM	500	0.00123225
Ak	Two nos. 6 mm thick hermetically sealed DGU toughened float glass (outer glass tinted and inner glass clear float)and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured). Double glazed panels with glass having properties like-VLT >30 to 45%, external reflection=8 to 20%, internal reflection=15 to 30%, solar factor=0.26 to 0.29, U value=1.6 to 1.8 W/sqmK parameters varies as per specification.	SQM	400	0.00114349

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
I	6 mm thick laminated glass	SQM	350	0.00120454
Am	8 mm thick toughened clear float glass	SQM	25	0.00006209
Bm	8 mm thick toughened clear float glass with etching	SQM	25	0.00007037
Cm	Two nos. 8 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	50	0.00018198
916	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.	RM	200	0.00002920
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	100	0.00011408
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	100	0.00021045
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	25	0.00007031
920	Roof skylight structure for atrium with 6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges for sky light for approved shape like dome, pyramidal etc. Joints are properly sealed with sealant, screws with pvc cap, self tapping screws, epdm rubber gasket.etc all complete as per detailed drawing and specification.	SQM	1,088	0.00178827
A921	Providing and fixing sliding door to be fabricated from mild steel sheet. The shutter shall be double or single leaf shutter as specified. The shutters shall be fabricated of specified size of M.S. angle iron frame diagonally braced with the same size of M.S. angle riveted/ welded together with 3mm gusset plate at junction to form a rigid frame. Sliding doors shall be either double plate or single plate construction as called for in drawings and schedules made out of 18 gauge steel sheets with adequate stiffeners including top and bottom guide rails of specified size angles or T-irons and 25mm diameter pulley or with 25mm diameter ball bearing at the bottom and guide block with steel pulleys at the top. The shutters shall be provided with locking arrangement, handles, stoppers, and holdfasts, other fittings etc all complete as per specification.	SQM	16	0.00005625

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
A922	Providing and fixing double leaf glazed sensor operated sliding anodized aluminium doors with digital Display Boards at different locations conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and doors, frames, mullions, transom etc. shall be anodized in a bath of sulphuric acid to provide a clear coating of minimum 0.6 mm thickness. The anodized materials shall then be sealed by immersing in boiling water for 15 minutes. A protective transparent coating shall be applied to the sections before shipment from the factory. Where required factory made evenly baked powder coated coloured aluminium extruded sections shall be used. DFT shall not be less than 0.8 mils. Colour shall be as per Colour Schedule or as per instruction of the Engineer-in-Charge fixed with rawl plugs, expansion fasteners, SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing and frame shall be paid separately)	SQM	10	0.00004922
1000	BRICKWORK: Brickwork masonry including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge for the following: (Supply of cement is in scope of contractor)			
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 conforming to IS 12894 with crushing strength of 75 kg/cm ² (including cost of cement for brick making)	CUM	500	0.00224229
A1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm / 345mm 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 conforming to IS 12894 with crushing strength of 75 kg/cm ² (including cost of cement for brick making)	CUM	5,000	0.02564472
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	CUM	250	0.00151015
A1003	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 fourth layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification.			
a	Using fly ash lime bricks conforming to IS 12894 with crushing strength of 75 kg/cm ² (including cost of cement for brick making)	SQM	450	0.00044427

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
1004	Providing brick soling including spreading of earth, ramming, watering including 25mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item). Using brick on edge.			
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	SQM	25	0.00001500
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	20	0.00001739
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	20	0.00009280
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	100	0.00001682
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	10	0.00000974
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	1,000	0.00012443
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	10	0.00000703
1011	Providing and filling brick bats in soak pits all complete.	CUM	20	0.00001982
1100	DAMP PROOF COURSE: Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, centering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge for the following: (Supply of cement is in scope of contractor)			
1101	Providing Damp Proof Course of following thickness with 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied one before & one after the DPC.			
a	40mm thick	SQM	570	0.00014425
1200	PLASTERING: Cement mortar plaster including making grooves wherever required including all labour, material (unless otherwise specified in BOQ/contract specification), scaffolding, curing etc at all level as per specification, drawings and as directed by engineer - in - charge for the following: (Supply of cement is in scope of contractor)			
A1201	Providing 20 mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:6 on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete as per specification.	SQM	27,500	0.00494084

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
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	25,700	0.00302401
1203	Providing 12mm thick plaster in cement mortar 1:6 on walls with rough finish all complete.	SQM	200	0.00002264
A1203	Extra over & above ST No. A1201 1202 & 1203 for using cement mortar 1:4 (1 cement : 4 coarse sand) instead of 1:6 (1 cement : 6 coarse sand).	SQM	53,400	0.00050957
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	15,700	0.00175603
A1204	Extra over & above ST No. 1204 for using cement mortar 1:3 (1 cement : 3 coarse sand) instead of 1:4 (1 cement : 4 coarse sand).	SQM	15,700	0.00004495
1207	Forming groove of uniform size from 12X12 mm upto 25X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battens, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	450	0.00000771
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	220	0.00007721
1209	Ruled pointing in masonry in Cement Mortar 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	100	0.00001063
A1210	Providing drip coarse on plastered surface at all elevations for all type of work such as chajjas, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	800	0.00002535
1300	FINISHES TO CONCRETE / PLASTERED SURFACES: Finishes, painting to concrete, plastered surfaces including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, surface preparation, scaffolding etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
1304	Two or more coats of acrylic distemper of approved brand and manufacturer to give an even shade including a priming coat with distemper primer complete.	SQM	20,000	0.00102338
A1305	Providing and applying two or more coats of acrylic plastic 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	2,500	0.00018617
A1306	Providing and applying 2 or more coats of acid/alkali,chemical 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	3,000	0.00064431

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
1307	Providing and applying two coats of Epoxy coating with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, oil, splash, spillage & acidic environment. The epoxy paint coating shall be of minimum 150 micron thickness over epoxy primer.	SQM	500	0.00009608
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	190	0.00002410
A1311	Two or more coats of washable synthetic enamel paint of approved make made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to all interior and exterior surfaces complete.	SQM	100	0.00000474
1313	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 thickness of minimum 2 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	500	0.00039866
A1317	Providing and applying 3 mm thick white cement putty punning on walls including preparation of surface, staging, etc to achieve a smooth even surface all complete as per specification and as directed by engineer.	SQM	12,062	0.00123593
B1317	Providing and applying fire proof putty on walls/holes 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	3,050	0.00046878
A1319	Providing and applying two or more coats of Acrylic emulsion paint weather coat similar to Weathergurd, Weathershield, Apex Ultima, or equivalent paint of approved brand and manufacturer and required shade over one coat of primer after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellent and extremely durable with color fastness as per specification.	SQM	12,500	0.00090704
1321	Providing and applying french polish (minimum 2 coats) on wood surface made from best quality shellac, denatured spirit and other suitable alcohol soluble ingredients and made by a well known approved manufacturer as per IS 348 including required base preparation etc. all complete as per specification	SQM	250	0.00004063
1400	FLOORING AND SKIRTING: Flooring and skirting at all level including base layer, labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, curing, polishing etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following: (Supply of cement is in scope of contractor)			

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
A1401	Providing and laying 50 mm thick heavy duty cement concrete (IPS) 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 as per specification. (Quoted item rate shall be inclusive of providing glass joint strips):	SQM	17,000	0.00658930
A1402	Providing and laying 50 mm thick heavy duty cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates) IPS flooring with 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	310	0.00012016
B1402	Providing and laying 18 mm thick skirting and dado with cement mortar 1:3 (1 cement: 3 sand) finished with a floating coat of neat cement all complete as per specification.	SQM	213	0.00005981
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.	SQM	700	0.00070527
A1406	Providing and Laying polished Kota stone 25 mm thk in flooring. Under bed shall average 25mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	200	0.00020959
1408	Providing and Laying polished Kota stone 18mm to 20mm thk in skirting projecting 6mm from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete.	SQM	75	0.00007630
A1408	Providing and Laying polished Kota stone 25mm thk in skirting projecting 6mm from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete.	SQM	25	0.00002666
A1410	Providing and laying Marble stone Flooring laid in 50mm overall thickness with 25 mm thick marble slabs (grade -1) with minimum 25mm thick underbed of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level.The marbel slabs/tiles laid over underbed with mortar 1:3, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	200	0.00069887

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
B1410	Providing and laying Marble stone Flooring laid in 50mm overall thickness with 20 mm thick marble slabs (grade -1) with minimum 30 mm thick underbed of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The marble slabs/tiles laid over underbed with mortar 1:3, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	50	0.00016687
C1410	Providing and laying polished Marble stone 25 mm thk in skirting and dado with 6mm thick projection from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete. including mortar ,cement slurry ,pigments, curing, grinding,moulding, granite polishing etc. all complete.	SQM	50	0.00018271
D1410	Providing and laying polished Marble stone 20mm thk in skirting and dado with 6mm thick projection from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete. including mortar ,cement slurry ,pigments, curing, grinding,moulding, granite polishing etc. all complete.	SQM	50	0.00017410
1412	Providing and Laying 18-20mm thick polished Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 30 mm thick of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	4,000	0.00994629
A1412	Providing and laying 25 mm thick polished Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 25mm thick of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	500	0.00133331
1414	Providing and Laying polished Granite stone 18-20mm thk in skirting and dado with 6mm thick projection from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete. including mortar ,cement slurry ,pigments, curing, grinding,moulding, granite polishing etc. all complete.	SQM	550	0.00136418
A1414	Providing and Laying polished Granite stone 25mm thk in skirting and dado with 6mm thick projection from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete. including mortar ,cement slurry ,pigments, curing, grinding,moulding, granite polishing etc. all complete.	SQM	100	0.00026681

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
A1418	Providing and Laying non-skid full body vitrified tiles non-porous,homogenous, abrasion resistant, floor tiles of 1st quality dual charged of size 600x 600mm of approved make from 'MARBONITE' or 'FERRASTONE of BOSS Profile limited' ,ENDURA" Jonson,Varmora,Qutone or equivalent in flooring and skirting over average 40 mm thick underbed for flooring and 6mm for skirting of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, cement slurry 3.3kg/sqm complete as per specification laid in pattern of following sizes:			
a	10 to11 mm thick tiles In flooring	SQM	6,000	0.00705372
b	10 to11 thick tiles In skirting and dado upto specific height	SQM	1,500	0.00187846
B1418	Providing and Laying 10 mm thk non-skid vitrified tiles of make 'MARBONITE' or 'FERRASTONE of BOSS Profile limited','RESTILE","ENDURA" of H & R Jonson(India) Pvt. Ltd. or equivalent in flooring and skirting over average 40 mm thick underbed for flooring and 6mm for skirting of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, cement slurry 3.3kg/sqm complete as per specification laid in pattern of following sizes:			
a	400X400 mm	SQM	350	0.00033032
b	600X600 mm	SQM	500	0.00058781
1419	Providing and Laying granite stone slab of 20mm thickness single piece for wash basin / sink slab /facia of black or approved colour including 20mm underbed of cement mortar 1:3 with cutting,making corners,moulding and opening etc. all complete.	SQM	70	0.00016890
A1422	Providing and Fixing Acid / Alkali resistant (Chemical resistant) vitrified tiles confirming to IS:4457 in flooring/Dado and shall be laid over bitumastic lining of min 12mm thick (to be laid in layers of 6mm each). The tiles shall be applied with 6mm thick Potassium Silicate bedding mortar epoxy based as per IS:4441, 4443 & 4832 and including preparation of surface, application of bitumen primer, curing etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable.			
a	20mm thick	SQM	625	0.00181329
b	38mm thick	SQM	2,500	0.00831656
1424	Providing and Fixing chemical resistant (AR)(Acid / Alkali) bricks (75mm thick) conforming to IS:4860 in the floor of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 18mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.	SQM	320	0.00098092

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
A1424	Providing and Fixing chemical resistant (AR)(Acid / Alkali) bricks (115mm thick) conforming to IS:4860 in the floor of neutralization pit. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 18mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.	SQM	2,125	0.00977090
A1427	Providing and Fixing 6mm thick glazed ceramic tiles of approved color and design of size 400x400mm in dado of approved size, projecting 6mm uniformly from adjacent plaster or wall finish with 50 mm wide matching moulded ceramic trims. The mix for 20mm thick underbed plaster shall consist of 1part cement and 3 parts sand by weight. fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry @ 3.3kg/sqm including pigments, curing etc all complete.	SQM	1,225	0.00081801
A1428	Providing and Laying flexible electric insulated 3 mm thick PVC synthetic sheet as per IS 15652-2006 of Suntex Insulatic Pvt. Ltd. Or similar all complete as per specification.	SQM	3,000	0.00187789
A1429	Providing and fixing Removable type flooring system (raised access floor) consisting of of fire resistant Cementitious panels of 600 x 600x 35 mm and Laminated with 1.2 mm thick fire retardant food grade antistatic laminate top finish to ensure max bonding to the steel surface. Cementitious panels shall be steel welded construction, with an enclosed bottom pan of 64 hemispherical and top plain sheet which are fuse welded at multiple location to form a panel. The panel is coated with 40-60-micron epoxy coat after cleaning, de-greasing, phosphate by several tank processes & is heated to achieve max adhesion to the panel surface & corrosion resistance. The inner empty core of the panel is injected with a light weight fire retardant, non-combustible cementitious compound at high pressure to fill in all the crevices of the panel and ensures support of not less than 90% of the top surface area of the panel. Pedestal (300mm – 800 mm) must be 25mm dia. pipe with min.2.0 mm thickness with bottom plate of 100x100x min.2.0mm thick & top plate must be 75x75x3.0 mm. All pedestal shall be tightening to Stringer of 20x30x575x1.0 mm Rectangular tube. The system shall be design for Uniformly distributed load (UDL) of 13 KN (1300 kg/sqm), for the same all complete as per specification.	SQM	500	0.00195852
1430	Providing and fixing dividing strips in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer in charge.			
a	Glass strips 40 mm wide and minimum 6 mm thick.	RM	400	0.00001625
b	Aluminium strips 40 mm wide and minimum 3 mm thick	RM	700	0.00005822
1500	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:			

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
1502	<p>Erection and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over epoxy primer applied over hot dipped galvanising @ 275 gm/sqm including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.</p> <p>(Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking and cost against supply of MS troughed metal sheet decking plate is payable seperately under ST S1502 of SCH-4 of Vol-III:Supply).</p>			
a	Span Upto 1800mm	SQM	8,000	0.00262371
1503	Providing and Fixing shear connectors of mild steel studs having 16mm dia and minimum 75 mm projected length above purlin passing through metal decking as per relevant IS codes and specification.	QUINTAL	38	0.00064747
A1504	<p>Fixing of wall cladding system comprising of colour coated profiled external sheet manufactured out of similar or equal to 0.45 mm BMT COLORBOND® XRW or equivalent steel- High tensile with min 550 MPa yield strength, metallic hot-dipped coated with Al-Zn alloy (55% Aluminium, 43.5% Zinc, 1.5% Si) as per AS1397 / IS15961 - ZINCALUME® AZ150 (min. 150 g/m² total on both sides) with Super Durable Polyester COLORBOND® steel XRW quality paint system of approved color, suitable for exterior application conforming to AS/NZS 2728 type-4 / IS15965 class 3.. Profile sheet of nominal.1015 mm effective cover width and nominal 28 mm deep ribs with subtle square fluting in the five pans at nominal 203 mm centre-to-centre. The end rib shall be designed for anti-capillary action, to avoid any seepage of water through the lateral overlap. The sheet shall have a total coating thickness of 35 microns, super durable polyester COLORBOND® XRW or equivalent with Thermatch™ solar reflectance technology quality paint system of 20 microns on exposed surface and 5 micron reverse polyester coat on back surface over 5 micron primer coat on both surfaces. The paint system would have stable resin & inorganic pigments for paint durability and is lead free for water harvesting. The steel sheet shall be fastened with nominal 40 µm zinc coated or nominal 25 µm Zinc-Tin alloy coated, Hex head, self-drilling screw as per AS 3566-2002 Class 3 fasteners with EPDM washer and also as per the requirement considering the profile shape and design load.</p> <p>(Cost on account of supply is payable seperately under ST SA1504 of SCH-4 of Vol-III: Supply)</p>	SQM	14,000	0.00387958

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
A1512	Providing and fixing insulation of resin bonded mineral wool of 25 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for under deck insulation including wrapping in black polythene black supported over weld mesh 75X75X1.6 MM dia to hold in position and application of glue & tying with lacing wire, for glass/rock wool as per manufacturer's recommendation.			
a	Mineral wool (spintex 300 or equivalent) insulation(density 48kg/cum) bound in polythene bags on top of false ceiling panels.	SQM	1,600	0.00043657
1514	Providing and installing under deck insulation with resin bonded rock wool 50 mm nominal thickness conforming to IS 8183 having a density of 48kg/cum using minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.56 mm dia and 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips but excluding cost of insulation.	SQM	4,000	0.00200867
A1519	Fixing of double skin insulated wall cladding system comprising of colour coated profiled external sheet manufactured out of similar or equal to 0.45 mm BMT COLORBOND® XRW or equivalent steel- High tensile with min 550 MPa yield strength, metallic hot-dipped coated with Al-Zn alloy (55% Aluminium, 43.5% Zinc, 1.5% Si) as per AS1397 / IS15961 - ZINCALUME® AZ150 (min. 150 g/m ² total on both sides) with Super Durable Polyester COLORBOND® steel XRW quality paint system of approved color, suitable for exterior application conforming to AS/NZS 2728 type-4 / IS15965 class 3.. Profile sheet of nominal.1015 mm effective cover width and nominal 28 mm deep ribs with subtle square fluting in the five pans at nominal 203 mm centre-to-centre. The end rib shall be designed for anti-capillary action, to avoid any seepage of water through the lateral overlap. The sheet shall have a total coating thickness of 35 microns, super durable polyester COLORBOND® XRW or equivalent with Thermatch™ solar reflectance technology quality paint system of 20 microns on exposed surface and 5 micron reverse polyester coat on back surface over 5 micron primer coat on both surfaces. The paint system would have stable resin & inorganic pigments for paint durability and is lead free for water harvesting. The steel sheet shall be fastened with nominal 40 µm zinc coated or nominal 25 µm Zinc-Tin alloy coated, Hex head, self-drilling screw as per AS 3566-2002 Class 3 fasteners with EPDM washer and also as per the requirement considering the profile shape and design load. The inner sheeting shall be 0.50mm/0.6mm TCT of SMP coated zincalume steel 150 gsm. (Zinc – aluminium alloy coating mass total of both sides as per AS 1397:1993) having 550 Mpa yield strength. The colour coating shall comprise of 25 microns finish coat over a 10-micron primer coat on the exposed side and a back coat of 10 microns over a primer coat of 5 micron on the reverse side.	SQM	7,000	0.00449684

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
	<p>The inner sheet shall have 980mm cover width 28mm high crests at 195mm centres with special male / female side laps and anti-siphoning features to prevent leakages. The inner sheet shall be fixed to the structure by means of self drilling fasteners no. 12-24 x 25 mm conforms to AS: 3566 Class-3 long at valley. Sub-girts of size 50mm x 50mm x 50mm manufactured out of 16G GI (1.6mm GI) 'Z' shape would be fixed the inner sheeting on face side at runner locations and outer sheeting shall be fixed with the help of concealed compatible interlocking clips and wafer head zinc coated self drilling fasteners / screws 4.2 x 25mm long on to the sub-girts. The clips shall be concealed and no fasteners are to penetrate the external sheeting. An insulation of 50mm thick Rockwool Insulation of density 48KG/M3 conforming to IS: 8183 shall be provided and fixed to the inner sheet and between the two sheets as per specification.</p> <p>(Cost against supply of sheet of double skin insulated wall cladding system is payable separately under ST SA1519 of SCH-4 of Vol-III:Supply)</p>			
1600	FALSE CEILING: False ceiling including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, suspension system etc at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
A1602	<p>Providing and Fixing and laying light weight mineral fiber tile false ceiling of minimum thickness 15 mm and exposed surface semi-perforated with depth of perforation as 4 mm and humid resistance of 95% RH and fire performance of class 0/1 as per BS 476 with metal suspension grid system with galvanized Tees of section 24 X 38 mm for main runners of approved colour and make as per specification, including 25mm thick mineral wool insulation (density48kg/cum) as per IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75 @ 1.2m) grid shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. complete with cut-outs etc. The size of tiles shall be 600 X 600 mm or 600 X 1200 mm. Required MS channel work shall be separately paid under relevant items of BOQ series 2300 .(Payment for Mineral wool insulation shall be made separately).</p> <p>Payments terms - a)on receipt of materials at site - 60%; b) Erection & fixing - 40%</p> <p>Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity</p>	SQM	1,000	0.00085451

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
A1603	<p>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 25mm thick mineral wool insulation(density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc all complete. Suitable M.S. channel grid with minimum MC 75 shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Payment for structural platform grid made up of MS Channels/ Beams / Angles shall be separately paid under relevant items of BOQ series 2300)(Payment for Mineral wool insulation shall be made separately)</p> <p>Payments terms - a)on receipt of materials at site - 60%; b) Erection & fixing - 40%</p> <p>Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity</p>	SQM	1,600	0.00356533
B1603	<p>Providing and Fixing permanently colour coated aluminium false ceiling of approved colour and Luxalon 150 C or approved equivalent with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm ,including 25mm thick mineral wool insulation(density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc all complete. Suitable M.S. channel grid with minimum MC 75 shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Payment for structural platform grid made up of MS Channels/ Beams / Angles shall be paid under relevant items of BOQ series 2300)(Payment for Mineral wool insulation shall be made separately).</p> <p>Payments terms - a)on receipt of materials at site - 60%; b) Erection & fixing - 40%</p> <p>Payment for Supply Quantity shall be restricted to the executed/erected quantity.</p>	SQM	500	0.00139271
A1604	<p>Providing and Fixing and laying permanently colour coated aluminium SQUARE type false ceiling of Luxalon or equivalent of approved colour with stove enamel finish of approved make with corrosion resistance aluminium alloys panels in 600mm X 600mm of minimum thickness 0.7mm with perforation in combination with built in non-woven tissue for providing good acoustic properties having coil coating of thickness 25 micron and install withT-grid (of profile 24 mm) in the same or contrasting colours or with 6mm recess joints.The Tile shall be clipped into clip in profile of min.0.5mm thick G.I. The clip in profile shall be supported from slab by means of rigid suspension of 4mm G.I. rod, hold on clamp with clip. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures etc. Suitable M.S. channel (minimum MC 75) grid 1200 mm C/C maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. The work to be complete as per specifications, drawings and direction of engineer incharge. (Payment for structural steel works for platform for movement is separately payable under relevant items of BOQ series 2300).</p> <p>Payments terms - a)on receipt of materials at site - 60%; b) Erection & fixing - 40%</p> <p>Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity</p>	SQM	300	0.00088943

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
1700	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:			
1707	Fixing GI down take pipes conforming to IS:1239 /IS:3589 of medium duty all complete for following diameters. (Cost on account of supply is payable separately under ST S1707 of SCH-4 of Vol-III: Supply)			
b	150 mm Dia	RM	3,200	0.00105131
c	200 mm Dia	RM	300	0.00015821
1800	MISCELLANEOUS: Miscellaneous works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge for the following: (Supply of cement is in scope of contractor)			
1801	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 230 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	14,200	0.02161771
1803	Supply and laying approved quality rounded pebbles / gravels of 40mm size in transformer yards.	CUM	672	0.00206228
1807	Anti termite chemical treatment of soil with Chlorpyriphos/Lindane E.C. 20% with 1% concentration conforming to IS:8944 and as per IS 6313 all complete. (Plinth area of building at ground floor only shall be measured for payment).	SQM	16,600	0.00227632
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	394	0.00235824
1809	Construction of below ground earthing system test pits as per drawing / sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing and specification (excavation & backfilling only will be paid under applicable BOQ items).	EACH	20	0.00011924
1810	Construction of below ground earthing system test links as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (excavation & backfilling only will be paid under applicable BOQ items).	EACH	75	0.00034263
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)	EACH	20	0.00000725
1812	Construction of below ground earthing system - Earth connection and riser pig tails as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items& steel shall be supplied by BHEL free of cost.)	EACH	20	0.00000453

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	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.	EACH	85	0.00139131
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.	EACH	20	0.00024702
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	88	0.00000642
1816	Providing and fixing PVC pressure release valve of minimum dia 90mm in water retaining structure including 160 mm dia housing pipe of minimum length 3.75 m with perforation as per IS4558, nylon jali, perforated end plug, collar, graded filter, excavation, fixing in concrete slab/wall etc. all complete.	EACH	53	0.00038647
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, surface preparation, curing, staging, compatible paintings etc. all complete.	CUM	100	0.00869563
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 suppression 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	1,000	0.00037647
1823	Providing and laying cinder filling in the toilets,roads,etc complete as directed by engineer in charge.	CUM	65	0.00007176
1824	Transportation 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 plant premises, with all manpower T & P etc. including loading and unloading as and when directed by BHEL.			
a	Steel scrap / metal scrap	MT	5	0.00000191
b	Debris & Other waste materials.	CUM	10	0.00000072
1827	Anti weed chemical treatment of soil with suitable chemical pertaining to the types of weeds found in the vicinity including providing anti-weed/ soil sterilization test certificate, performance guarantee of three years etc. all complete.	SQM	13,750	0.00003492
1835	Providing & laying Firecrete 20 to 25 mm thick layer including curing etc. all complete over the top of fuel oil tank pad as per manufacturer's specification.	CUM	10	0.00029210
1836	Providing & fixing flame arrestor of approved specification at the end of vent pipes upto 160 mm dia in Oily water manholes in hazardous zone of refinery area.	EACH	32	0.00056942
1837	Providing 25 mm thick premix carpet surfacing laid to slope with 12 mm and down broken stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction etc. all complete as per specification.	SQM	372	0.00003970
1838	Providing 75 mm thick anti corrosive layer laid to required slope consisting of clean & well graded coarse sand mixed with A90 grade bitumen for softening point upto 45 degree Celcius or A65 grade bitumen for softening point above 45 degree celcius as per IS: 73 or its equivalent quality 8 to 10% by volume and rolled or compacted all complete as per specification.	SQM	372	0.00036842

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
1841	Providing and fixing Semi Unitised STRUCTURAL GLAZING to fixed panels with no aluminium section exposed to outside and only glass panels with silicon joint visible from outside. The system specially designed with aluminium sections of grade 63400 WP IS: 733 and IS: 1285 pure polyester powder coated 50- 60 microns make; Akzo Nobel applicator only in approved colour with mullion fixed to beams / columns through adequately designed MS powder coated. The member and bracket shall be fixed with appropriate bolts and expansion fasteners, so as to withstand the dead load of the structural glazing as well as stresses due to wind pressure. The Structural glazing system shall be designed as per BIS code for required wind pressure IS: 875 part III with as per the prevailing site conditions and building profiles and use of aluminium section alloy as per IS : 8147. System design to strictly consider for thermal movements, air infiltration, water penetration, seismic movement and structural movement, submit the calculation for review and approval of shop / fabrication drgs from BHEL. Silicon sealant structural grade and weather grade shall be GE/Dow corning/Sikka or Equivalent. The contractor shall submit structural stability report of the structural glazing system from a consultant to be get approved by the engineer incharge. Providing and fixing G.I. flashing at soffit level /sill level made out of 1.5mm thick G.I. Sheet with powder coated bent to required profile and shape to seal the soffit area. Openable glazing panel where ever required shall be with two point locking with friction stays, as per detail design requirement, provided with approved hardware of Dorma/Gieeze or equivalent make, all complete as per specification. (Payment for Glass shall be made separately).	KG	600	0.00035329
2000	FENCING AND GATES: Fencing and gates including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc at all level as per specification, drawings and as directed by engineer - in - charge for the following: (Supply of cement is in scope of contractor)			
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. (Structural post shall be paid separately under item 2007)	RM	150	0.00024835

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
2003	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. Concertina of height of 600 mm at top of chain link fencing shall be provided with all accessories. Concertinal shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts etc. all complete. (Structural post shall be paid separately under ST No. 2007)	RM	350	0.00061571
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	18	0.00113505
2009	Supply, fabrication,Installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.	MT	10	0.00073146
2100	WATER SUPPLY: Water supply work including men, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following: (Supply of cement is in scope of contractor)			
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	104	0.00007804
2102	Providing and Fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	EACH	104	0.00005546
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	104	0.00008623
b	50mm nominal bore.	EACH	104	0.00020732
2104	Providing and Fixing GI pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, complete for internal works with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc all complete for following sizes:			
a	15 mm nominal bore.	RM	980	0.00029179
b	20 mm nominal bore.	RM	490	0.00016114
c	25 mm nominal bore.	RM	490	0.00018602
d	50 mm nominal bore.	RM	212	0.00011628

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
2105	Providing and Fxing GI pipes class B complete for external work with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete for following sizes:			
a	15 mm nominal bore.	RM	100	0.00002489
b	20 mm nominal bore.	RM	50	0.00001400
c	25 mm nominal bore.	RM	218	0.00007224
d	50 mm nominal bore.	RM	302	0.00015089
e	65mm nominal bore.	RM	50	0.00003248
f	32mm nominal bore.	RM	50	0.00002154
2106	Providing and Fxing 750mmx450mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc all complete.	EACH	37	0.00003105
2107	Providing and Fixing 610mmx127mmx6mm thk clear glass with C.P. Guard rails and mounted on C.P. brackets etc all complete.	EACH	36	0.00001938
2108	Providing and Fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.	EACH	36	0.00001776
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	36	0.00001465
A2112	Providing and Fxing SS (stainless steel) wall mounted paper holder with suitable cover cum cutter fitted with SS screws etc. all complete.	EACH	36	0.00001563
2113	Providing and Fixing chromium plated brass shower rose 100mm dia with 15 or 20 mm inlet dia all complete.	EACH	36	0.00002416
2114	Providing and Fixing in position P.V.C. water tank of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.			
a	500 litres capacity	EACH	2	0.00000857
b	1000 litres capacity	EACH	8	0.00006858
c	2000 litres capacity	EACH	2	0.00003429
d	5000 litres capacity	EACH	2	0.00008573
A2115	Providing and Fixing SS (stainless steel) Grab bar as per specification fo disabled person as per specification and instruction by engineer incharge.	RM.	25	0.00002466
2200	SANITARY: Sanitary work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following: (Supply of cement is in scope of contractor)			

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
2201	Providing and Fixing glazed vitreous china Wash Basin of approved make conforming to IS:2556 part 4 of oval shape with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug, 32mm chromium plated brass bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required etc all complete.			
a	White	EACH	50	0.00046957
b	Colored	EACH	50	0.00046957
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	5	0.00002556
2203	Providing and Fixing stainless steel kitchen sink of size 610x510x200mm conforming to IS: 13983 including all fittings etc. all complete.	EACH	20	0.00011887
2204	Providing and Fixing colour glazed vitreous china European type water closet conforming to IS:2556 with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre PVC flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc all complete.			
a	Floor mounted	EACH	46	0.00018167
b	Wall mounted	EACH	46	0.00018789
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	46	0.00020016
2206	Providing and Fixing white flat back glazed vitreous china urinals of size 440x265x355 mm with photo voltaic control flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete.	EACH	46	0.00074909
2207	Providing and 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	50	0.00001390
b	110mm dia pipes	RM	100	0.00003784
c	160mm dia pipes	RM	460	0.00030138
d	200mm dia pipes	RM	230	0.00017361
2208	Providing and 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	760	0.00031129
b	300mm dia	RM	50	0.00004097

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
c	450mm dia	RM	50	0.00007193
d	600mm dia	RM	50	0.00009130
e	900mm dia	RM	50	0.00013846
2209	Providing and 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	100	0.00003945
b	250mm dia	RM	50	0.00002702
c	300mm dia	RM	50	0.00003055
d	450mm dia	RM	100	0.00008913
e	500mm dia	RM	100	0.00009282
2211	Providing and Fixing C.I Manhole heavy duty cover of size 600mmx450mm including frame from reputed manufacture etc. all complete.	EACH	23	0.00022951
2212	Providing and Fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	23	0.00023037
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	71	0.00015699
b	150x100mm P or S Type.	EACH	71	0.00016101
c	150x150mm P or S Type.	EACH	71	0.00016488
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	117	0.00014024
2215	Providing and Fixing 100mm heavy duty UPVC floor traps with 100 mm inlet and 100 mm outlet & C.P jalli all complete.	EACH	117	0.00011944
2216	Providing and Installing approved brand single tap water cooler of 80 L cooling capacity all complete.	EACH	15	0.00061336
2217	Providing and Installing approved brand single tap water cooler of 150 L cooling capacity all complete.	EACH	5	0.00036739
2218	Providing and Fixing white viterous urinal partitions of size 675x325x85mm all complete.	EACH	23	0.00004506
2219	Providing and Fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.	EACH	23	0.00012331
2220	Providing and Fixing heavy duty cast iron pipes for above and below ground sanitary works with water tight lead joint, fixing clamps, excavation, filling, disposal etc. all complete for the following.			
a	75mm dia pipes	RM	50	0.00004215
b	100mm dia pipes	RM	200	0.00021712

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
c	150mm dia pipes	RM	100	0.00017020
d	200mm dia pipes	RM	50	0.00013379
e	250mm dia pipes	RM	20	0.00009565
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following:			
A2301	<p>Fabrication, erection and alignment of structural steel with mild steel rolled section / built up section / combination of both conforming to grade E300/ E250 as per 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 yard and one coat after erection) of DFT 25 micron each coat, 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 20° C for welding over 20 mm and upto 40 mm & 66° C for welding over 40 mm and upto 63 mm & 110° 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 seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL.</p> <p>Payments terms - a) Fabrication - 65%; b) Erection - 25%; c) Alignment - 10%.</p> <p>(BHEL WILL SUPPLY STRUCTURAL STEEL AS FREE OF COST AS PER TCC)</p>	MT	12,500	0.23790274
A2302	Extra over ST NO. A2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2)) as per SIS 05-5900 and applying zinc-silicate primer in coats of minimum 50 micron (DFT) at shop and 50 micron (DFT) after erection, instead of primer coat of red oxide zinc-chromate, including touch-up painting etc all complete.	MT	1,100	0.00470895

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
B2302	Extra over ST NO. A2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2)) as per SIS 05-5900 and applying epoxy resin based zinc rich primer in coats of minimum 25 micron (DFT) at shop and 25 micron (DFT) after erection, instead of primer coat of red oxide zinc-chromate, including touch-up painting etc all complete.	MT	500	0.00164649
2304	Extra over ST No. 2301 for providing and applying two coats of synthetic enamel paint with minimum 50 micron total dry film thickness (DFT) of approved make and shade to achieve an even shade over steel sections already having primer coats and keeping overall DFT with primer not less than 110 microns including protection and cleaning, scaffolding etc. all complete.	MT	10,400	0.01817656
A2304	Extra over ST No. A2301 for providing and applying two or more coats of anti-corrosive paint with minimum 110 micron dry film thickness (DFT) over steel sections already having primer coats. Anti corrosive paint shall be : Self Priming, Single Pack, Elastomeric (450% elongation), thermoplastic, fire retardant, Coating skin tensile strength 18 to 21 kg. Per sq. Cm antifungal, antibacterial, anticorrosive, nontoxic graft Copolymer coating of Meta Chem Paints & Adhesive Pvt. Ltd or similar approved to achieve an even shade over steel sections including protection and cleaning, scaffolding etc. all complete.	MT	500	0.00131081
A2305	Providing and applying two coats of High built epoxy finish paint with minimum 90 micron Dry film thickness in each finish coat of approved make and shade to achieve an even shade over steel surfaces already having primer coats including protection and cleaning, scaffolding etc. all complete.	MT	1,100	0.00348959
B2305	Providing and applying two coats of epoxy paint with minimum 25 micron dry film thickness (DFT) of approved make and shade to achieve an even shade over steel sections already having primer coats and keeping overall DFT with primer not less than 110 microns including protection and cleaning, scaffolding etc. all complete.	MT	500	0.00105512
2307	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. (Cost against supply of factory made electroforged galvanised grating units payable separately under ST No. S2307 of SCH-4 of Vol-III: Supply)			
a	Minimum galvanisation of 610 g/sqm	MT	259	0.00722926
A2308	Erection and alignment of factory made hot deep galvanised (Minimum galvanisation of 610 g/sqm) 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. (Cost against supply of Mild Steel (Heavy Duty) welded grating units is payable separately under ST No. SA2308 of SCH-4 of Vol-III: Supply)	MT	58	0.00125898

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
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	1,509	0.00011113
2312	Providing and Fixing in positng 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	13,942	0.00169056
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	10	0.00005288
2314	Addition to, alterations in and/or modifiction 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	10	0.00011715
b	In fabrication yard	MT	10	0.00009809
A2317	Fabrication and erection of minimum 6 mm thick stainless steel liner of grade AISI-316L; Finish Grade 2B (Cold rolled, Annealed & Pickled and Skin passed) 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) (Cost on account of supply is payable seperately under ST SA2317 of SCH-4 of Vol-III: Supply)	MT	90	0.00401372
2318	Fixing in position 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. (Cost against supply of PTFE type sliding bearings payable seperately under ST No. S2318 of SCH-4 of Vol-III: Suply)			
c	40 Tons	EACH	8	0.00003606
d	50 Tons	EACH	4	0.00002016
e	60 Tons	EACH	6	0.00003628

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
f	100 Tons	EACH	2	0.00001375
2319	Providing and Fixing flexible open ended bellow strap of neoprene of minimum thickness 2 mm and minimum width 200 mm with aluminium stripped edges as sealing below top of bunker and bottom of tripper floor to avoid the coal dust nuisance all complete.	RM	246	0.00047274
2320	Supply, fabrication and fixing of stainless steel pipe hand railing conforming to SS 409 of 32 mm/40 mm dia including transportation, loading/unloading etc. all complete. Payments terms - a)on receipt of materials at site - 65%; b) Erection & fixing - 35% Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity	MT	2	0.00049304
A2321	Supply, fabrication and fixing of hot dip galvanised (Minimum galvanisation of 610 g/sqm) MS pipe hand railing of 32 mm/40 mm dia including transportation, loading/unloading etc. all complete. Payments terms - a)on receipt of materials at site - 65%; b) Erection & fixing - 35% Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity	MT	37	0.00278407
2323	Conducting radiography test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	500	0.00221404
2324	Conducting ultasonic test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	500	0.00032250
2325	Conducting ultasonic test on steel plates as per ASTM-A435 or equivalent wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	SQM	200	0.00006450
2326	Conducting magnetic particle test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	500	0.00018919
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	500	0.00020760
2328	Supply and 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	5	0.00001578

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
2329	<p>Design, supply, fabrication, erection of stoplog gates, Sluice gates etc. in CW Pumps with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fastners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc all complete. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head. (only weight of structural steel including embedments shall be considered for payment purpose, SS component shall be paid separately under relevant BOQ item)</p> <p>(supply of structural steel is in the scope of contractor only)</p> <p>Payments terms - a)on receipt of materials at site - 65%; b) Erection & fixing - 35%</p> <p>Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity</p>	MT	69	0.00589494
2331	<p>SS component mentioned under ST No. 2329.</p> <p>Payments terms - a)on receipt of materials at site - 65%; b) Erection & fixing - 35%</p> <p>Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity</p>	MT	12	0.00257178
A2332	<p>Design, Supplying, fabricating, erecting in position and testing / examining bolted and / or welded structural steel work for stationary screens made out of rolled sections and / or plates including cutting, straightening if required, edge preparation, bolting / welding of joints, cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc as 750 gms./sqm. followed by application of an etching primer and dipping in black bitumen as per BS 3416, submission of drawings / fabrication drawings for engineers approval etc all complete. (supply of structural steel is in the scope of contractor only)</p> <p>(only weight of structural steel including embedments shall be considered for payment purpose, SS component shall be paid separately under relevant BOQ item)</p> <p>Payments terms - a)on receipt of materials at site - 65%; b) Erection & fixing - 35%</p> <p>Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity</p>	MT	10	0.00080914
A2334	<p>SS component mentioned under ST No. A2332.</p> <p>Payments terms - a)on receipt of materials at site - 65%; b) Erection & fixing - 35%</p> <p>Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity</p>	MT	2	0.00042863
2400	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: (Supply of cement is in scope of contractor)			
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	11,554	0.00041076

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
2402	Supplying and filling with selected good earth of approved quality in layers not exceeding 300 mm loose thickness using borrowed soil (borrowed soil to be arranged by the bidder) and compacted so as to achieve at least 95 % maximum dry density as per IS-2720 (Part-VII) including royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete.	CUM	1,125	0.00016712
2403	Providing, stacking & laying granular morrum for shoulder including watering, compaction with road roller to required camber etc all complete.	CUM	1,688	0.00333062
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	4,240	0.01059885
2405	Providing & laying water bound macadam sub 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	2,120	0.00546093
A2405	Providing & laying Granular sub-base (GSB) with crushed stone (Grading-I as per IRC15), morrum and sand including screening, spreading to template and compacting etc all complete as per specification and as per direction of Engineer in charge.	CUM	2,120	0.00582499
A2405	Construction of granular sub-base by providing close graded Material conforming to Grading-I as per IRC15, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of 300 mm consolidated thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, etc all complete as per specifications and directions of Engineer-in-Charge	CUM	2,120	0.00546093
2406	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	5,300	0.01430340
2407	Providing & applying tack coat of low viscosity liquid bitumen of grade 80/100 confirming to IS 73, 217 or 454 as applicable @10 kg/ 10 sqm for untreated WBM surface including scraping, cleaning with compressed air etc all complete.	SQM	42,400	0.00228801
2409	Providing, mixing & laying of dense bituminous macadam course of specified thickness using bitumen of grade 60/70 conforming to IS 73, aggregates and binder material including hot mixing, hot laying, rolling etc all complete for the following.			
2409.a	75mm compacted thickness	SQM	21,200	0.01334445
2410	Providing, mixing & laying 20 mm compacted thick premix carpet in a single course composed of suitable small size aggregate premixed with bituminous binder using medium setting grade bitumen on a prepared base including mixing, applying, rolling etc all complete.	SQM	21,200	0.00356660

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-3 : SERVICE

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
2412	Providing and applying liquid seal coat comprising of an application of a layer of bituminous binder using medium setting grade bitumen at the rate of 9.8kg/10sqm followed by a cover of stone chips at the rate of 0.09 cum/10sqm including rolling etc all complete.	SQM	21,200	0.00137280
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	7,500	0.00195507
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	375	0.00015431
2500	PILING			
B2504	Breaking of pile head to cut off level and exposing pile reinforcement for embedment in pile cap including cutting, bending, placing, welding, disposal of debris within the plant premises etc. all complete as per specification, drawing and as directed by the engineer-in-charge for the following.			
a	Pile with 600 mm diameter	EACH	1,666	0.00100901
b	Pile with 760 mm diameter	EACH	1,840	0.00178723
	TOTAL			0.91583642

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-4 : SUPPLY

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
400	REINFORCEMENT WORK : Reinforcement work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge for the following: (Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity)			
S401	Providing 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	50	0.00206685
700	MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following: (Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity)			
S701	Supply of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.	MT	225	0.00906321
S702	Supply, Fabrication, transportation, delivery at site 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.	MT	40	0.00189418
S707	Providing rails(52kg/rm) and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete.	MT	86	0.00456496

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-4 : SUPPLY

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
900	DOORS & WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following: (Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity)			
SA913	Providing metal rolling shutter and rolling grill type shutter as per specification made from 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 shall be designed to withstand a wind load of minimum 200 Kg/m ² without excessive deflection as per specification and 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 riveted with stiffening angles.(partly coiled and lath/full lath). The guides shall be either rolled or pressed deep channel sections of minimum 75 mm and 25 mm wide fitted with necessary fitting and fixtures.			
b	Mechanically Operated	SQM	91	0.00041262
c	Electrically and Mechanically operated	SQM	312	0.00156382

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-4 : SUPPLY

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
1500	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: (Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity)			
S1502	Designing, providing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over epoxy primer applied over hot dipped galvanising @ 275 gm/sqm including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.			
a	Span Upto 1800mm	SQM	8,000	0.00612200

VOLUME-III
PRICE SCHEDULE, REV-00

**Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL
Sagardighi TPP Extension Project.**

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-4 : SUPPLY

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
SA1504	Designing, Providing of wall cladding system comprising of colour coated profiled external sheet manufactured out of similar or equal to 0.45 mm BMT COLORBOND® XRW or equivalent steel- High tensile with min 550 MPa yield strength, metallic hot-dipped coated with Al-Zn alloy (55% Aluminium, 43.5% Zinc, 1.5% Si) as per AS1397 / IS15961 - ZINCALUME® AZ150 (min. 150 g/m ² total on both sides) with Super Durable Polyester COLORBOND® steel XRW quality paint system of approved color, suitable for exterior application conforming to AS/NZS 2728 type-4 / IS15965 class 3.. Profile sheet of nominal 1015 mm effective cover width and nominal 28 mm deep ribs with subtle square fluting in the five pans at nominal 203 mm centre-to-centre. The end rib shall be designed for anti-capillary action, to avoid any seepage of water through the lateral overlap. The sheet shall have a total coating thickness of 35 microns, super durable polyester COLORBOND® XRW or equivalent with Thermatch™ solar reflectance technology quality paint system of 20 microns on exposed surface and 5 micron reverse polyester coat on back surface over 5 micron primer coat on both surfaces. The paint system would have stable resin & inorganic pigments for paint durability and is lead free for water harvesting. The steel sheet shall be fastened with nominal 40 µm zinc coated or nominal 25 µm Zinc-Tin alloy coated, Hex head, self-drilling screw as per AS 3566-2002 Class 3 fasteners with EPDM washer and also as per the requirement considering the profile shape and design load.	SQM	14,000	0.00905235

VOLUME-III
PRICE SCHEDULE, REV-00

**Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL
Sagardighi TPP Extension Project.**

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-4 : SUPPLY

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
SA1519	<p>Designing, Providing of double skin insulated wall cladding system comprising of colour coated profiled external sheet manufactured out of similar or equal to 0.45 mm BMT COLORBOND® XRW or equivalent steel- High tensile with min 550 MPa yield strength, metallic hot-dipped coated with Al-Zn alloy (55% Aluminium, 43.5% Zinc, 1.5% Si) as per AS1397 / IS15961 - ZINCALUME® AZ150 (min. 150 g/m² total on both sides) with Super Durable Polyester COLORBOND® steel XRW quality paint system of approved color, suitable for exterior application conforming to AS/NZS 2728 type-4 / IS15965 class 3.. Profile sheet of nominal.1015 mm effective cover width and nominal 28 mm deep ribs with subtle square fluting in the five pans at nominal 203 mm centre-to-centre. The end rib shall be designed for anti-capillary action, to avoid any seepage of water through the lateral overlap. The sheet shall have a total coating thickness of 35 microns, super durable polyester COLORBOND® XRW or equivalent with Thermatch™ solar reflectance technology quality paint system of 20 microns on exposed surface and 5 micron reverse polyester coat on back surface over 5 micron primer coat on both surfaces. The paint system would have stable resin & inorganic pigments for paint durability and is lead free for water harvesting. The steel sheet shall be fastened with nominal 40 µm zinc coated or nominal 25 µm Zinc-Tin alloy coated, Hex head, self-drilling screw as per AS 3566-2002 Class 3 fasteners with EPDM washer and also as per the requirement considering the profile shape and design load.The inner sheeting shall be 0.50mm/0.6mm TCT of SMP coated zincalume steel 150 gsm. (Zinc – aluminium alloy coating mass total of both sides as per AS 1397:1993) having 550 Mpa yield strength. The colour coating shall comprise of 25 microns finish coat over a 10-micron primer coat on the exposed side and a back coat of 10 microns over a primer coat of 5 micron on the reverse side.</p> <p>The inner sheet shall have 980mm cover width 28mm high crests at 195mm centres with special male / female side laps and anti-siphoning features to prevent leakages. The inner sheet shall be fixed to the structure by means of self drilling fasteners no. 12-24 x 25 mm conforms to AS: 3566 Class-3 long at valley. Sub- girts of size 50mm x 50mm x 50mm manufactured out of 16G GI (1.6mm GI) 'Z' shape would be fixed the inner sheeting on face side at runner locations and outer sheeting shall be fixed with the help of concealed compatible interlocking clips and wafer head zinc coated self drilling fasteners / screws 4.2 x 25mm long on to the sub-girts. The clips shall be concealed and no fasteners are to penetrate the external sheeting. An insulation of 50mm thick Rockwool Insulation of density 48KG/M3 conforming to IS: 8183 shall be provided and fixed to the inner sheet and between the two sheets as per specification.</p>	SQM	7,000	0.01049264

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-4 : SUPPLY

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
1700	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: (Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity)			
S1707	Providing of GI down take pipes conforming to IS:1239 /IS:3589 of medium duty all complete for following diameters.			
b	150 mm Dia	RM	3,200	0.00245307
c	200 mm Dia	RM	300	0.00036916
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge for the following: (Finally the payment for Supply Quantity shall be restricted to the executed/erected quantity)			
S2307	Supplying factory made electroforged galvanised grating units with mild steel having minimum galvanisation conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.			
a	Minimum galvanisation of 610 g/sqm	MT	259	0.01686827

VOLUME-III
PRICE SCHEDULE, REV-00

Civil, Structural & Architectural works for Main Plant & BOP (excluding piling and levelling & grading work) for 1x660 MW, Unit no. 5, WBPDCL Sagardighi TPP Extension Project.

TENDER NO. PSER:SCT:SDG-C2085:20

SCH-4 : SUPPLY

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	WEIGHTAGE
SA2308	Supplying of factory made hot deep galvanised (Minimum galvanisation of 610 g/sqm) 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.	MT	58	0.00293763
SA2317	Supply of minimum 6 mm thick stainless steel liner of grade AISI-316L; Finish Grade 2B (Cold rolled, Annealed & Pickled and Skin passed) 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)	MT	90	0.01605489
S2318	Providing of 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.			
c	40 Tons	EACH	8	0.00008414
d	50 Tons	EACH	4	0.00004704
e	60 Tons	EACH	6	0.00008466
f	100 Tons	EACH	2	0.00003209
	TOTAL			0.08416358