



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 04

Ref: PSER:SCT:IIS-C879:TCN-04

Date: 09-06-2008

Sub	Tender change notice (TCN) 04.	
Job	Installation & Testing of RCC bored cast-in-situ piles, Soil Investigation, Civil works for pile caps, Supply and Fabrication of embedment / insets and Misc. Civil foundation works for boilers and other miscellaneous structures etc. work for 3x18 MW Power Blowing Station, IISCO Steel Plant, Burnpur, West Bengal.	
Ref	1.0	Tender no PSER:SCT:IIS-C879:08.
	2.0	BHEL's NIT vide reference no PSER:SCT: IIS-C879:08, dated 19-05-08.
	3.0	TCN-01 DT: 29-05-08
	4.0	TCN-02 DT: 02-06-08
	5.0	TCN-03 DT: 04-06-08

With reference to above, following changes / clarifications, relevant to tender, may please be noted & complied with while submitting offer.

- 1.0 Revised Volume-IIIA -(Rev-01) & Revised Volume-IIIB -(Rev-01), superseding VOL-IIIA -rev.0 & VOL-IIIB - rev.0 issued earlier along with NIT. (File-2 & File-3)
- 2.0 No deviation certificate has been revised and the same is attached. Bidder to submit 'No deviation certificate' as per attached format only. (Annexure-1 of TCN)

BIDDERS ARE REQUESTED TO NOTE THAT THE REVISED VOL- IIIA (REV-01) & VOL.- IIIB (REV-01) SUPERSEDES ORIGINAL VOL- IIIA (REV-0) & VOL.- IIIB (REV-0). BIDDERS SHALL SUBMIT THEIR OFFER ONLY AS PER REVISED VOL- IIIA (REV-01) & VOL.- IIIB (REV-01). OFFER FROM BIDDER IN SUPERSEDED BOQ WILL NOT BE CONSIDERED.

BIDDERS ARE REQUIRED TO SUBMIT A DECLARATION IN TECHNO-COMMERCIAL OFFER THAT THEY HAVE SUBMITTED THEIR PRICE BID IN SEALED ENVELOP AS PER REVISED VOL- IIIA (REV-01) & VOL.- IIIB (REV-01) ONLY.

Bidders to note that this TCN-04 will form part of the tender document and are requested to comply.

All other terms and conditions of subject Tender / Tender documents shall remain unchanged.

Based on above, offer shall be submitted by revised due date of submission of offer i.e. 17-06-2008.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

SR.MANAGER (SCT)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : 23211691

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

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

Sub	No Deviation Certificate.	
Job	Installation & Testing of RCC bored cast-in-situ piles, Soil Investigation, Civil works for pile caps, Supply and Fabrication of embedment / insets and Misc. Civil foundation works for boilers and other miscellaneous structures etc. work for 3x18 MW Power Blowing Station, IISCO Steel Plant, Burnpur, West Bengal.	
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	3.0	TCN-01 DT: 29-05-08
	4.0	TCN-02 DT: 02-06-08
	5.0	TCN-03 DT: 04-06-08
	6.0	TCN-04 DT: 09-06-08

Dear Sirs,

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

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT and confirm our acceptance to reverse auctioning process and we hereby convey our unqualified acceptance to all terms and conditions as stipulated in the tender and NIT.

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

We confirm to have submitted offer strictly in accordance with tender instructions.

Thanking you,

Yours faithfully,

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

PRICE SCHEDULE, REV-01

Installation and Testing of RCC bored cast-in-situ piles, Soil testing, Civil works for pile caps, supply and fabrication of embedment/ insets and misc. Civil foundation works for boilers and other misc. structures etc. for 3x18 MW POWER & BLOWING STATION at IISCO STEEL PLANT, BURNPUR, WEST BENGAL.

VOLUME – III - A

PREAMBLE

1.0	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with Volume-I and Volume – II as applicable.
2.0	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions.
3.0	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4.0	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, taxes, 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 tender document and this schedule.
5.0	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 thirty percent ($\pm 30\%$) of the contract price.
6.0	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.
7.0	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted.
8.0	The tender shall be deemed to have 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.
9.0	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.
10.0	For evaluation purpose (deciding L1), Total price quoted by bidders in enclosed BOQ cum rate schedule shall only be considered.

PRICE SCHEDULE, REV-01

Installation and Testing of RCC bored cast-in-situ piles, Soil testing, Civil works for pile caps, supply and fabrication of embedment/ insets and misc. Civil foundation works for boilers and other misc. structures etc. for 3x18 MW POWER & BLOWING STATION at IISCO STEEL PLANT, BURNPUR, WEST BENGAL.

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
1.0	EXCAVATION					
1.1	Earthwork in excavation in all kinds of ordinary and hard soil (including slushy soil) up to a depth of 2.0 m below ground level and stacking within a lead of 150 m, with necessary shoring, strutting, trimming and dressing of sides, etc., including bailing / pumping out of surface water/rain water/sub soil water, cutting minor vegetation, if any, complete as per drawings and specifications.					
a)	All kinds of soil (Ordinary and hard soil / slag)	CU. M.	1,800			
b)	Same as item 1.1 above, but for soft rock / slag upto 2.0m below GL requiring chieseling	CU. M.	1,000			
c)	Same as item 1.1 above, but for hard rock / sheet rock / slag requiring blasting upto 2.0m below GL	CU. M.	1,000			
1.2	Same as Item no-1.1 above but from 2.0 m - 4.0 m depth					
a)	All kinds of soil (Ordinary and hard soil / slag) from 2.0m to 4.0m below GL	CU. M.	800			
b)	Same as item 1.1 above, but for soft rock / slag from 2.0m to 4.0m below GL requiring chieseling	CU. M.	500			
c)	Same as item no:-1.1 above, but for hard rock / sheet rock / slag requiring blasting upto 2.0m to 4.0m below GL	CU. M.	500			
1.3	Extra over item no:- 1.1 for additional lead of 1.5 KM (beyond the initial lead of 150m as per item 1.1), carriage and disposal, with loading unloading spreading, levelling the disposal area, all labour, transport etc complete.	CU. M.	2,000			
1.4	Extra over item no:- 1.1 for additional lead upto 2.5 KM (beyond the initial lead of 150m as per item 1.1), carriage and disposal, with loading unloading spreading, levelling the disposal area, all labour, transport etc complete.	CU. M.	2,000			
2.0	BACKFILLING					

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
2.1.a	Earth work in backfilling and compacting in layers not exceeding 200 mm thickness in and around trenches, plinths, sides of foundations and other underground structures, pipes, area levelling etc. including lead upto 2.0KM and all lifts and including loading from stock pile, excavation, carting, unloading, filling, watering and compacting/ramming each layer, all complete as per specifications, drawings and as directed by the engineer.	CUM	2,400			
2.1b	Earth work in backfilling With selected earth (cohesive non-swelling / murrum) obtained from borrow pits outside the battery limit within a lead of 5.0 Km and all lifts, loading, unloading, spreading, transporting, watering, compacting in layers not exceeding 200 mm thickness in and around trenches, plinths, sides of foundations and other underground structures, pipes, inclusive of necessary royalty charges , as per specifications, drawings and as directed by the engineer.	CU. M.	800			
2.2	Supplying and filling river sand in layers not exceeding 150mm including compacting by mechanical means, flooding with water etc all complete as per specification and as directed by the Engineer.	CU. M.	243			
2.3 a)	DELETED					
b)	DELETED					
2.4 a)	Site grading and levelling with filling excavated earth obtained from foundations in layers not exceeding 250 mm within the project area using mechanical / manual means breaking clods, cutting heaps, compacting using compaction equipment in non-accessible areas and rolling with road roller in open areas to obtain 95% of proctor density for cohesive soils and 85 % for non-cohesive soils, all complete as drgs and specifications.	CU. M.	300			
3.0	CONCRETE					
3.1	Supplying, laying in position, compacting and curing as per specification Plain cement concrete (using OPC/PSC/SRC) of the following mix with 20mm down size aggregates below GL and upto 1.0M above GL , including consolidation of subgrade wherever required. (Cement will be supplied by BHEL free of cost as per SCC).					
a)	M10	CU. M.	223			

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
3.2	Supplying, laying in position, curing as per specifications Controlled concrete (using OPC/PSC/SRC) of the following grades(graded coarse aggregates of 40mm down, 20mm down 12mm down shall be used wherever applicable), with plasticiser etc complete. (Cement will be supplied by BHEL free of cost as per SCC).					
a)	for all depths below GL and 1.0 m above GL					
	i) Grade M-25 in foundations, slabs, columns, floors, beams.etc. with minimum cement content of 380 kg/cum. (Cement will be supplied by BHEL free of cost as per SCC).	CU. M.	1,115			
b)	for all elevations 1m above G.L.					
	i) Grade M-25 with minimum cement content of 380 kg/m ³	CU. M.	50			
4.0	FORM WORK					
4.1	Supplying, installing, dismantling and removing the following classes 'of formwork as per drawings and specifications at all levels using steel / plywood wood shuttering.					
a)	Straight in plan (including raft of STG/GTG.)	SQ.M.	3,029			
b)	Curved in plan	SQ.M.	20			
4.2	Providing Pockets in concrete of sectional area less than 0.1 sq.m in plan by fixing and removing formwork for anchor bolts , pipe sleeves etc. as per drgs including. all materials ,labour etc. complete as per drawings and specifications.					
	a) Up to 300 mm deep	Nos	29			
	b) 301mm to 600mm deep	Nos.	48			
	c) 601mm to 1000mm deep	Nos.	6			
5.0	REINFORCEMENT					
5.1	Transporting, cutting, bending, binding and placing in position following types of High Strength Deformed (HSD)/TMT bars of grade Fe-415/500 of all diameters and at all elevations using approved quality binding wires as per specifications and drawings. (TMT Reinforcements will be supplied by BHEL free of cost as per SCC).	M.T.	140			

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
5.2	a) Supply, transporting, cutting, bending, binding and placing in position Of MS reinforcement conforming to IS:432 bars of all diameters and at all elevations using approved quality binding wires as per specifications and drawings. (Contractor to supply reinforcement rod of SAIL/TISCO/RINL).	M.T.	10			
6.0	STRUCTURAL STEEL					
6.1	DELETED					
6.2	DELETED					
6.3	Supplying, fabricating and fixing in positions MS inserts like channels, angles, flats, rounds, plates, pipe sleeves and any other structural shape etc. including cost of steel , necessary templates / stagings, cutting to required lengths, bolting revetting welding etc. as required all complete as per drawings and specifications. (Contractor will supply all materials).	M.T.	2			
6.4	Supplying, fabricating and fixing in positions foundation bolts/ hardware in concrete including cost of rail sections, necessary templates / stagings, cutting to required lengths, bolting revetting welding etc. as required all complete as per drawings and specifications. (Contractor will supply all materials).	M.T.	1			
6.5	Taking delivery of foundation hardware supplied by BHEL and transporting to site, fixing in position foundation hardware such as anchor bolts, channels, angles, plates, sleeves, nuts, washers, anchor assembly etc. as per drawing including fixing to proper level and alignment using contractor's own templates, protecting till handover of the foundation, all complete as per drawings and specifications.	M.T.	2			
7.0	MASONRY & ALLIED WORKS					
7.1	Supplying and laying of coarsed rubble stone massonary in cement mortar 1:6 in foundations and basement as per specifications (Using OPC/PSC/SRC cement). (Cement will be supplied by BHEL free of cost as per SCC).	CU.M.	1			
7.2	Supplying and laying in position brick work in foundation and upto plinth in cement sand mortar (1:6) including mixing mortar, laying bricks,raking of joints, curing etc., all complete as per drawings as spefications. (Using OPC/PSC/SRC cement). (Cement will be supplied by BHEL free of cost as per SCC).	CUM	2			
21.0	GROUNDING					

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
21.1	Supplying, laying, cutting , jointing , welding, painting the joints with cold galvanising paint after welding and testing ground conductors including cost of excavation up to 1m, backfilling, galvanising paint , labour, material etc. complete as per drawing and specifications. (All ground conductors and materials to be supplied by contractor).					
a)	Earthing strip 75 X 10 mm	R.M.	600			
b)	Earth risers of 75X10 mm GI strip	R.M.	50			
c)	Test Pit Electrode as per drg. no.:GT57191 construction of masonry chambers with M.S. covers (for test electrodes), filling with sand, charcoal and salt etc. all complete as per drawings and specifications.	Nos.	10			
d)	Pipe Electrode as per drg. no.GT57191 sheet 2.(Ref. specs.)	R.M.	10			
22.0	PILING					
22.1	Mobilization of minimum 16 complete sets of piling rigs to achieve construction of 16-20 nos pile per day and ancillary equipments, power winches, trimie pipe, including boring equipment all complete to site for instillation of 450mm diameter & 550mm diameter Bored cast-in-situ R.C.C piles passing through top slag deposit and terminated within underlying weathered rock layer with a socket length not less than 3 times dia. and demobilization from site after completion of work as per specifications. (Payments : a) 50% to be released on mobilisation of 8 nos rig full set and b) balance 50% on completion of balance rig mobilisation).	LS	1			
22.2a	Construction of 450mm nominal dia. Bored cast-in-situ piles passing through top slag deposit and terminated within underlying weathered rock layer (below virgin soil) with a socket length not less than 3 times dia. using cement concrete (cement not less than 400 Kg/cum. Consumption of cement will be recorded at site and will be considered actual for reconciliation purpose.) of grade M-25, providing & fixing one no. 40mm ID PVC pipe with minimum wall thk. of 4mm (schedule 80) as per specifications including cost of plant and equipment, temporary casing pipes, labour, concrete, PVC pipes, materials (reinforcement will be paid for under item No.22.10) etc. complete, rate up to 20m depth below cutoff level. (Cement will be supplied by BHEL free of cost as per SCC).	RM	28,512			

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
22.2b	Construction of 550mm nominal dia. Bored cast-in-situ piles passing through top slag deposit and terminated within underlying weathered rock layer (below virgin soil) with a socket length not less than 3 times dia. using cement concrete (cement not less than 400 Kg/cum. Consumption of cement will be recorded at site and will be considered actual for reconciliation purpose.) of grade M-25, providing & fixing one no. 40mm ID PVC pipe with minimum wall thk. of 4mm (schedule 80) as per specifications including cost of plant and equipment, temporary casing pipes, concrete, PVC pipes, labour, materials (reinforcement will be paid under item No.22.10) etc. complete, rate up to 20m depth below cutoff level. (Cement will be supplied by BHEL free of cost as per SCC).	RM	19,008			
22.3	Testing of piles (Cost of construction of 450/550mm nominal dia Bored cast in-situ piles required for carrying out initial load tests of piles shall be paid as per relevant items of 22.2a/22.2b).					
22.3.1	Conducting initial vertical load tests by direct loading on piles including finishing pile head, supply and erection of all kentledge, labour, excavation, backfilling, compaction etc. all complete.	NOS.	4			
22.3.2	Same as item No. 22.3 but for routine vertical load test by direct loading.	NOS.	36			
22.3.3	Same as item No. 22.3 but for initial lateral load test by direct loading.	NOS.	6			
22.3.4	Same as item No. 22.3 but for routine lateral load test by direct loading.	NOS.	36			
22.3.5	Same as item No. 22.3 but for initial pullout test by direct loading.	NOS.	4			
22.3.6	Same as item No. 22.3 but for routine pullout test by direct loading.	NOS.	36			
22.4a	Empty boring 450mm dia in ordinary soil or top slag deposit.	RM	1,560			
22.4b	Empty boring 550mm dia in ordinary soil or top slag deposit.	RM	1,040			
22.5	Supplying, bending, binding, transporting and placing in position following types of HSD bars reinforcement conforming to IS:1786 of minimum grade Fe 415 of all diameters and at all elevations using approved quality binding wires as per specifications and drawings for piling work. (TMT Reinforcements will be supplied by BHEL free of cost as per SCC).	MT	940			

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
22.6	Conducting Cross hole Ultrasonic testing of piles through pipe sleeves provided in piles, interpretation & analysis of test data by engaging a competent independent agency including supply & arrangement of testing equipments, making required platforms etc all complete as per specifications.	NOS.	300			
22.7	Supply of M S plates, bending, fabrication, welding, driving permanent steel casing for bored cast-in-situ pile including cost of all materials, labour etc. complete.	MT	10			
24	Soil Investigation					
24.1	Boring upto the depth of 20m or upto a depth required for necessary collection of data for identifying rock layer for termination of pile, whichever is more through top blast furnish slag deposit and bottom virgin soil and rock layer of sufficient diameter using Bellor method including taking out undisturbed soil samples, maintaining necessary driving records of standard penetration test at various depths, identifying the rock layer for termination of pile including back filling with sand and furnishing the necessary reports and data in the bore log form, to the Engineer. (One transparency and six copies each).	Nos.	6			
24.2	Digging trial pits, taking undisturbed/disturbed soil samples and carrying out plate load test as per specification at 2m depth from Terrace level (TC) using 600X600mm plates, including de- watering, if required and back filling after tests, and furnishing the necessary reports and data in required form, to the Engineer.	Nos.	3			
25	ENABLING CIVIL WORKS					
25.1	Sand filling (river sand) in plinth in layers not exceeding 15cm as directed by BHEL and consolidating same by thorough saturation with water and ramming complete including the cost of supply of sand. (Payment to be made on measurement of finished qty).	CUM	50			
25.2	Concrete of grade M7.5 as filling course at any level below foundations, drain, mass dumps, floors with 40 mm nominal size graded aggregate, materials, labour etc. complete. (Cement - PPC/OPC/PSC to be supplied by the vendor with test certificate from direct manufacturer of ACC /ULTRATECH /CETURY /BIRLA /LAFARGE /INDIA CEMENT etc).	CUM	75			

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
25.3	Reinforced/ plain cement concrete grade M-25 with approved stone chips 20mm down for floor, drain etc excluding cost of shuttering and reinforcement if any but including all materials, labour, curing etc complete all the levels (cement - PPC/OPC/PSC to be supplied by the contractor with test certificate from direct manufacturer of ACC /ULTRATECH /CETURY /BIRLA /LAFARGE /INDIA CEMENT etc).	CUM	265			
25.4	Reinforced/ plain cement concrete 1:2:4 with approved trap stone chips 20mm down for floor, drain etc excluding cost of shuttering and reinforcement if any but including all materials, labour, curing etc complete all the levels (cement - PPC/OPC/PSC to be supplied by the contractor with test certificate from direct manufacturer of ACC /ULTRATECH /CETURY /BIRLA /LAFARGE /INDIA CEMENT etc).	CUM	300			
25.5	Hire and labour charges for 25mm thick shuttering for bldg. works for concrete foundations, floor/roof slabs, beams, lintels, columns, chajja, fins etc. including fitting, fixing and striking out carefully after completion of work for below ground and upto 6m height from finished floor lvl..					
25.5a	Without vertical props.	SQM	410			
25.5b	With vertical props at all levels.	SQM	105			
25.6	Supply, Transporting, straightening, cutting, bending, placing at any level, binding in position mild steel reinforcements in concrete including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings.(Contractor to provide M S round from SAIL /TISCO / IISCO / SRMB / SHRICON / SHYAM STEEL etc.)	MT	3			
25.7	Supply, Transporting, straightening, cutting, bending, placing at any level, binding in position high yield strength steel reinforcements in concrete including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings.(Contractor to provide TMT bar Fe-415 quality from SAIL /TISCO / IISCO / SRMB / SHRICON / SHYAM STEEL etc.)	MT	49			
25.8	Brick work in cement mortar (1:6) in foundation, plinth, pier, abutment, wing wlls, drains, culvert etc including all materials, labours, scaffolding and other incidental etc. complete. (Cement - PPC/OPC/PSC to be supplied by the contractor with test certificate from direct manufacturer of ACC /ULTRATECH /CETURY /BIRLA /LAFARGE /INDIA CEMENT etc).					

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
25.8a	Ordinary bricks / fly ash bricks, Class designation 50, below plinth lvl.	CUM	115			
25.8b	Ordinary bricks / fly ash bricks, Class designation 50, above plinth lvl upto 7,5 M height.	CUM	270			
25.9	12.5 cm thick brick work in cement mortar (1 cement :4 sand) including cost of scaffolding and other incidental work etc. completed. (Cement - PPC / OPC / PSC to be supplied by the contractor with test certificate from direct manufacturer of ACC / ULTRATECH / CETURY / BIRLA / LAFARGE / INDIA CEMENT etc).					
25.9a	Ordinary bricks / fly ash bricks, Class designation 50, below plinth level.	SQM	200			
25.9b	Ordinary bricks / fly ash bricks, Class designation 50, above plinth lvl upto 7,0 M height.	SQM	200			
25.10	Plaster to wall floor, slab soffits, fins, sills etc. with sand cement mortar including rounding off or chenefering corners as directed and racking out joints or roughening of concrete surface including chipping & application of cement slury where necessary etc complete as per drawing and direction of engineer. (Cement - PPC/OPC/PSC to be supplied by the contractor with test certificate from direct manufacturer of ACC /ULTRATECH /CETURY /BIRLA /LAFARGE /INDIA CEMENT etc).					
25.10a	With 1:6 cement mortar average 12.5mm thick plaster below GL	SQM	80			
25.10b	With 1:6 cement mortar average 12.5mm thick plaster above GL	SQM	900			
25.10c	outside plaster With 1:6 cement mortar average 15 mm thick above GL.	SQM	900			
25.11	Supply, fabrication, erection and painting of Structural steel work in columns, beams, wind ties, etc with simple rolled structural members connected to one with another with brackets gusset cleats, bolts and nuts or welding etc. as per design & direction complete including fabrication, hoisting & erection including all materials, labour etc. complete with one coat of primer and two coats of synthetic enamel painting. (Contractor to provide Structural steel from JINDAL/SAIL /TISCO / IISCO / SRMB / SHRICON / SHYAM STEEL / RINL etc with test certificate.)	MT	35			

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
25.12	Supply, fabrication, erection and painting of steel work with tubular sections as per IS 1161& 1239 for roof truss, purlin etc including all materials conforming to relevant IS codes, labour etc as per drawing, specification and direction of engineer with one coat of primer and two coats of synthetic enamel painting. (Contractor to provide structural steel from JINDAL/ BANSAL /TATA/SHYAM STEEL/ RINL etc)	MT	35			
25.13	Providing asbestos cement 6 mm corrugated sheet of Konark/ Everest or equivalent for roofing & wall, fitted and fixed with 8mm dia 'J' or 'L' hook bolts and nuts, sheet bolts, limpet & bitumen washer and putty complete including the cost of A C sheet, carriage, taxes etc as per drawing and specification.	SQM	2350			
25.14	Asbestos sheet ridging with 230mm lap each way, fitted and fixed with necessary hook bolts, nuts, screws, washers etc complete including the cost of A C sheet ridge, carriage, taxes etc as per drawing and specification.	RM	130			
25.15	Providing, transporting, fixing of MS foundation/anchor bolt (Grade-1 of IS:432 & IS:2062) assembly in concrete along with nuts, lock nuts, 25mm dia, 950mm long including furnishing of labour, materials, welding, etc.all complete as per specification, drawing and instruction of the engineer. (vendor to supply all material).	KG	2800			
25.16	Supplying, fitting and fixing openable steel windows conforming to us IS:1036-1975 and IS:7452-1974 with non friction projecting type of hinges fitted with revetts or nut bolt system as directed, glazing cleats, lugs, two nos m s anodised peg stays and fastner for each window of size 900mmX1200mm, 4mm thick clear glass pane (each glass max size 450mmX450mm), including fixing in position, fixing lugs in cement concrete 1:2:4 with stone chips 12.5mm down cutting holes & mending goods damages, 10mm dia ms round guard bar welded horizontally 125 c/c with each window etc. complete with one coat of primer and two coats of synthetic enamel finish in all respect.	SQM	32			
25.17	Supplying, fitting and fixing fixed steel windows conforming to us IS:1036-1975 and IS:7452-1974 with glazing, cleats, lugs, 4mm thick clear glass pane (each glass max size 450mmX450mm), etc. including fixing in position, fixing lugs in cement concrete 1:2:4 with stone chips 19mm down cutting holes & mending goods damages, with 10mm dia ms round guard bar fixed horizontally 125 c/c etc.complete with one coat of primer and two coats of synthetic enamel finish in all respect.	SQM	75			
25.18	Priming one coat to timber or steel or plastered surface or other metal surface with ready mix paint of approved quantity including smoothening of surface by sand papering etc complete.	SQM	250			

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
25.19	Painting two coats with best quantity synthetic enamel paint ready mix oil bound paint of approved make and brand including smoothening surface by sand pepering etc. including using approved putty etc. on the surface if necessary.					
25.19a	On steel or other metal or wooden surface with super gloss.	SQM	250			
25.20	3 coats white washing with line including cleaning and smoothening surface thoroughly to give an even shade.	SQM	450			
25.21	Providing Plaster of Paris (birla white or equivalent) 2 mm thick punning over finished plaster surface and finished with smooth surface as per specification at all levels.	SQM	150			
25.22	Two coats of water proofing cement paint of Seacem or equivalent make & shade applied on outer wall including scraping the surface thoroughly on plastered or concrete surface (manufacturers specification to be followed) at all levels including all materials, labours, scaffolding etc. complete as per direction of engineer.	SQM	1400			
25.23	Supply, manufacturing, fixing M S Sliding door made of M S anle frame / channel/flats /msround and 2mmthick M S sheet with necessary roller, size of opening 4M (w)X 5M (H), shutter size2.1X5.1M (approx), with all embedments, materials, labour, with one coat of primer followed by two coats of synthetic enamel paint finish, etc complete.	SQM	80			
25.24	Providing attach toilet with following facilities as directed by BHEL: (a) Inside size of toilet 1.5Mx1.35M , (b) 5mm thick white colour ceramic floor tile & inside walls tile upto 1.2 M height from finish floor, (c) one white vitreous wash basin 550x400 mm (Hindustan make or equivalent) with CI bracket, 15 mm cp brass pillar taps, 32 mm PVC waste water pipe, 32mm CP brass waste,one CP towel rail 550mm long, one best quality 550x400mm mirror etc complete, (d) one European type WC Pan with seat and lid black colour, low level 10 lts capacity white PVC flushing cistern, etc (e) all inside pipe lines shall be 15mm /20mm PVC & concealed pipes, (f) main external supply water pipe line shall be 25mmdia PVC of 6 M, complete in all respect including testing.(g) Soil pipe shall be min 75mm dia CI for below floor if any and outside shall be 100mm pvc of supreme or equivalent. Masonry & plastering will be paid as per respective items. Price to be quoted as lumsun for each set of toilet.	SET	4			

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
25.25	<p>Providing common toilet with following facilities as directed by BHEL: (a) Inside size of toilet 6.0Mx2.7M, (b) 5mm thick white colour ceramic floor tile and inside walls tile upto 1.35 M height from finish floor, (c) two white vitreous wash basin 550x400 mm (Hindustan make or equivalent) with CI bracket, 15 mm cp brass pillar taps, 32 mm PVC waste water pipe, 32mm CP brass waste, two CP towel rail 550mm long, two best quality 550x400mm mirror etc complete in all respect, (d) two WC chamber with European type WC Pan with seat and lid black colour, low level 10 lts capacity white PVC flushing cistern, etc complete in all respect, (e) all inside pipe line shall be 15mm /20mm PVC and concealed pipes, (f) main supply external supply water pipe line shall be 25mm dia PVC of 12 M, (g) one bathroom with one 15 CP tap, one CP shower,</p> <p>(h) two nos flat back white vitreous urinal (half stall urinal) 610mm x 400mm x 380mm with C I automatic cistern 5 litre with 20mm syphon, C I bracket, necessary GI pipe connection with urinal, pvc waste pipe etc. complete in all respect, (i) Soil/ drain pipe shall be min 75mm dia CI for below floor inside if any and outside shall be 100mm dia PVC of supreme or equivalent. Masonry & plastering will be paid as per respective items. Price shall be quoted as lumpsum for each set of common toilet.</p>	SET	1			
25.26	Consolidation of subgrade/ existing surface with 12 T power roller or vibromax including making good the undulations with earth and rerolling the subgrade for road, hard surfacing of equipment store, assembly yard etc as directed by BHEL.	SQM	13000			
25.27	Providing and Laying water bound macadam average thickness 75mm base for hard surfacing of open equipment store, preassembly yard etc in layers of required thickness with stone aggregate 75mm to 45mm size stone screening and binding material including screening, sorting, spreading and consolidation with power road roller 12T including carriage spreading and consolidation of blinding material moorum etc Including cost of material,labour,all complete.	SQM	450			
25.28	12 mm thick cement plaster (1:6) with 1mm neat cement punning for drain etc complete with all materials including cement, labour etc as directed by BHEL.	SQM	90			

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
25.29	Supplying, fabrication and installation of natural colour matt finish 10-12 micron anodised aluminium (Indal or equivalent section) framework for false ceiling with 12 mm thick SITATEX random perforated white ceiling tiles (610 mm x 610 mm) for false ceiling including vertical drops wherever required, of IS approved extruded sections with 35mm x 25mm x 1.2 mm thick main tee placed @ 614 mm c/c grid pattern and 25mm x 25mm x 1.2mm Aluminium cross tee with Al. angle at the periphery with the walls, the main runners to be suspended from roof truss by 4mm GI wire at suitable spacing and 150mm long special J adjustors with 100mm lengththread for level adjustment upto 0.25mm with double nuts and washers. The GI wire to be suspended by MS Cleat of size 50 x 50 mm x 3 mm fixed to RCC slab by special fasteners, including fixing of ceiling boards and cost of all accessories, as per specification and direction of Engineer in charge.	SQM	450			
25.30	Providing and laying of 2mm thick PVC flooring & 100mm high skirting with all materials and labour etc complete..	SQM	450			
25.31	Providing PVC (polypropylene random co-polymer PP-R type - 3) pipe and fittings and fixtures of Supreme or equivalent make with all materials, labour etc complete for drinking water .					
25.31a	for external 32mm dia	RM	25			
25.31b	for external 40mm dia	RM	50			
25.32	Providing PVC pipe with fittings and fixtures of Supreme or equivalent make with all materials, labour etc complete for external sewer line / waste water line connection upto open drain or manhole to manhole / septic tank / soak pit, as directed by BHEL.					
25.32a	for external 75mm dia	RM	30			
25.32b	for external 100mm dia	RM	30			
25.33	Providing and fixing of wooden solid flush door with commercial ply finish, fitted with MS hinges, one each of 150 mm aluminium tower bolt, 16X300mm long Al sliding door bolt & 100mm aluminium handle, finished with one coat of primer & two coats of synthetic enamel paint etc complete.					
25.33a	30 mm thick	SQM	12			

SL NO	DESCRIPTION	UNIT	QTY	RATE		AMOUNT
				IN FIGURES	IN WORDS	
25.33b	35 mm thick	SQM	5			
25.34	Providing and fixing of wooden frame second class sisoo or equivalent for door frame including fixing on wall with ms cleats/flats and embeded in concrete, finished with one coat of primer & two coats of synthetic enamel paint etc with all labour & materials complete.	CUM	0.40			
TOTAL PRICE						
27	GENERAL					
25.1	For items not covered under items above, quote % above or below the Delhi Schedule of rates 2007.					
	a) Rate for complete item					
	b) Rate for supply of material					
	c) Rate for supply of labour					

PRICE SCHEDULE, REV-01

Installation and Testing of RCC bored cast-in-situ piles, Soil testing, Civil works for pile caps, supply and fabrication of embedment/ insets and misc. Civil foundation works for boilers and other misc. structures etc. for 3x18 MW POWER & BLOWING STATION at IISCO STEEL PLANT, BURNPUR, WEST BENGAL.

VOLUME – III - B

PREAMBLE

1.0	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with Volume-I and Volume – II as applicable.
2.0	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions.
3.0	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4.0	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, taxes, 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 tender document and this schedule.
5.0	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 thirty percent ($\pm 30\%$) of the contract price.
6.0	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.
7.0	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted.
8.0	The tender shall be deemed to have 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.
9.0	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.
10.0	For evaluation purpose (deciding L1), Total price quoted by bidders in enclosed BOQ cum rate schedule shall only be considered.

PRICE SCHEDULE, REV-01

Installation and Testing of RCC bored cast-in-situ piles, Soil testing, Civil works for pile caps, supply and fabrication of embedment/ insets and misc. Civil foundation works for boilers and other misc. structures etc. for 3x18 MW POWER & BLOWING STATION at IISCO STEEL PLANT, BURNPUR, WEST BENGAL.

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
1.0	EXCAVATION			
1.1	Earthwork in excavation in all kinds of ordinary and hard soil (including slushy soil) up to a depth of 2.0 m below ground level and stacking within a lead of 150 m,with necessary shoring, strutting, trimming and dressing of sides, etc., including bailing / pumping out of surface water/rain water/sub soil water, cutting minor vegetation, if any, complete as per drawings and specifications.			
a)	All kinds of soil (Ordinary and hard soil / slag)	CU. M.	1,800	
b)	Same as item 1.1 above, but for soft rock / slag upto 2.0m below GL requiring chieseling	CU. M.	1,000	
c)	Same as item 1.1 above, but for hard rock / sheet rock / slag requiring blasting upto 2.0m below GL	CU. M.	1,000	
1.2	Same as Item no-1.1 above but from 2.0 m - 4.0 m depth			
a)	All kinds of soil (Ordinary and hard soil / slag) from 2.0m to 4.0m below GL	CU. M.	800	
b)	Same as item 1.1 above, but for soft rock / slag from 2.0m to 4.0m below GL requiring chieseling	CU. M.	500	
c)	Same as item no:-1.1 above, but for hard rock / sheet rock / slag requiring blasting upto 2.0m to 4.0m below GL	CU. M.	500	
1.3	Extra over item no:- 1.1 for additional lead of 1.5 KM (beyond the initial lead of 150m as per item 1.1), carriage and disposal, with loading unloading spreading, levelling the disposal area, all labour, transport etc complete.	CU. M.	2,000	
1.4	Extra over item no:- 1.1 for additional lead upto 2.5 KM (beyond the initial lead of 150m as per item 1.1), carriage and disposal, with loading unloading spreading, levelling the disposal area, all labour, transport etc complete.	CU. M.	2,000	

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
2.0	BACKFILLING			
2.1.a	Earth work in backfilling and compacting in layers not exceeding 200 mm thickness in and around trenches, plinths, sides of foundations and other underground structures, pipes, area levelling etc. including lead upto 2.0KM and all lifts and including loading from stock pile, excavation, carting, unloading, filling, watering and compacting/ramming each layer, all complete as per specifications, drawings and as directed by the engineer.	CUM	2,400	
2.1b	Earth work in backfilling With selected earth (cohesive non-swelling / murrum) obtained from borrow pits outside the battery limit within a lead of 5.0 Km and all lifts, loading, unloading, spreading, transporting, watering, compacting in layers not exceeding 200 mm thickness in and around trenches, plinths, sides of foundations and other underground structures, pipes, inclusive of necessary royalty charges , as per specifications, drawings and as directed by the engineer.	CU. M.	800	
2.2	Supplying and filling river sand in layers not exceeding 150mm including compacting by mechanical means, flooding with water etc all complete as per specification and as directed by the Engineer.	CU. M.	243	
2.3 a)	DELETED			
b)	DELETED			
2.4 a)	Site grading and levelling with filling excavated earth obtained from foundations in layers not exceeding 250 mm within the project area using mechanical / manual means breaking clods, cutting heaps, compacting using compaction equipment in non-accessible areas and rolling with road roller in open areas to obtain 95% of proctor density for cohesive soils and 85 % for non-cohesive soils, all complete as drgs and specifications.	CU. M.	300	
3.0	CONCRETE			
3.1	Supplying, laying in position, compacting and curing as per specification Plain cement concrete (using OPC/PSC/SRC) of the following mix with 20mm down size aggregates below GL and upto 1.0M above GL , including consolidation of subgrade wherever required. (Cement will be supplied by BHEL free of cost as per SCC).			

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
a)	M10	CU. M.	223	
3.2	Supplying, laying in position, curing as per specifications Controlled concrete (using OPC/PSC/SRC) of the following grades(graded coarse aggregates of 40mm down, 20mm down 12mm down shall be used wherever applicable), with plasticiser etc complete. (Cement will be supplied by BHEL free of cost as per SCC).			
a)	for all depths below GL and 1.0 m above GL			
	i) Grade M-25 in foundations, slabs, columns, floors, beams.etc. with minimum cement content of 380 kg/cum. (Cement will be supplied by BHEL free of cost as per SCC).	CU. M.	1,115	
b)	for all elevations 1m above G.L.			
	i) Grade M-25 with minimum cement content of 380 kg/m ³	CU. M.	50	
4.0	FORM WORK			
4.1	Supplying, installing, dismantling and removing the following classes 'of formwork as per drawings and specifications at all levels using steel / plywood wood shuttering.			
a)	Straight in plan (including raft of STG/GTG.)	SQ.M.	3,029	
b)	Curved in plan	SQ.M.	20	
4.2	Providing Pockets in concrete of sectional area less than 0.1 sq.m in plan by fixing and removing formwork for anchor bolts , pipe sleeves etc. as per drgs including. all materials ,labour etc. complete as per drawings and specifications.			
	a) Up to 300 mm deep	Nos	29	
	b) 301mm to 600mm deep	Nos.	48	
	c) 601mm to 1000mm deep	Nos.	6	
5.0	REINFORCEMENT			

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
5.1	Transporting, cutting, bending, binding and placing in position following types of High Strength Deformed (HSD)/TMT bars of grade Fe-415/500 of all diameters and at all elevations using approved quality binding wires as per specifications and drawings. (TMT Reinforcements will be supplied by BHEL free of cost as per SCC).	M.T.	140	
5.2	a) Supply, transporting, cutting, bending, binding and placing in position Of MS reinforcement conforming to IS:432 bars of all diameters and at all elevations using approved quality binding wires as per specifications and drawings. (Contractor to supply reinforcement rod of SAIL/TISCO/RINL).	M.T.	10	
6.0	STRUCTURAL STEEL			
6.1	DELETED			
6.2	DELETED			
6.3	Supplying, fabricating and fixing in positions MS inserts like channels, angles, flats, rounds, plates, pipe sleeves and any other structural shape etc. including cost of steel , necessary templates / stagings, cutting to required lengths, bolting revetting welding etc. as required all complete as per drawings and specifications. (Contractor will supply all materials).	M.T.	2	
6.4	Supplying, fabricating and fixing in positions foundation bolts/ hardware in concrete including cost of rail sections, necessary templates / stagings, cutting to required lengths, bolting revetting welding etc. as required all complete as per drawings and specifications. (Contractor will supply all materials).	M.T.	1	
6.5	Taking delivery of foundation hardware supplied by BHEL and transporting to site, fixing in position foundation hardware such as anchor bolts, channels, angles, plates, sleeves, nuts, washers, anchor assembly etc. as per drawing including fixing to proper level and alignment using contractor's own templates, protecting till handover of the foundation, all complete as per drawings and specifications.	M.T.	2	
7.0	MASONRY & ALLIED WORKS			
7.1	Supplying and laying of coarsed rubble stone massonary in cement mortar 1:6 in foundations and basement as per specifications (Using OPC/PSC/SRC cement). (Cement will be supplied by BHEL free of cost as per SCC).	CU.M.	1	

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
7.2	Supplying and laying in position brick work in foundation and upto plinth in cement sand mortar (1:6) including mixing mortar, laying bricks,raking of joints, curing etc., all complete as per drawings as specifications. (Using OPC/PSC/SRC cement). (Cement will be supplied by BHEL free of cost as per SCC).	CUM	2	
21.0	GROUNDING			
21.1	Supplying, laying, cutting , jointing , welding, painting the joints with cold galvanising paint after welding and testing ground conductors including cost of excavation up to 1m, backfilling, galvanising paint , labour, material etc. complete as per drawing and specifications. (All ground conductors and materials to be supplied by contractor).			
a)	Earthing strip 75 X 10 mm	R.M.	600	
b)	Earth risers of 75X10 mm GI strip	R.M.	50	
c)	Test Pit Electrode as per drg. no.:GT57191 construction of masonry chambers with M.S. covers (for test electrodes), filling with sand, charcoal and salt etc. all complete as per drawings and specifications.	Nos.	10	
d)	Pipe Electrode as per drg. no.GT57191 sheet 2.(Ref. specs.)	R.M.	10	
22.0	PILING			
22.1	Mobilization of minimum 16 complete sets of piling rigs to achieve construction of 16-20 nos pile per day and ancillary equipments, power winches, trimie pipe, including boring equipment all complete to site for instillation of 450mm diameter & 550mm diameter Bored cast-in-situ R.C.C piles passing through top slag deposit and terminated within underlying weathered rock layer with a socket length not less than 3 times dia. and demobilization from site after completion of work as per specifications. (Payments : a) 50% to be released on mobilisation of 8 nos rig full set and b) balance 50% on completion of balance rig mobilisation).	LS	1	

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
22.2a	Construction of 450mm nominal dia. Bored cast-in-situ piles passing through top slag deposit and terminated within underlying weathered rock layer (below virgin soil) with a socket length not less than 3 times dia. using cement concrete (cement not less than 400 Kg/cum. Consumption of cement will be recorded at site and will be considered actual for reconciliation purpose.) of grade M-25, providing & fixing one no. 40mm ID PVC pipe with minimum wall thk. of 4mm (schedule 80) as per specifications including cost of plant and equipment, temporary casing pipes, labour, concrete, PVC pipes, materials (reinforcement will be paid for under item No.22.10) etc. complete, rate up to 20m depth below cutoff level. (Cement will be supplied by BHEL free of cost as per SCC).	RM	28,512	
22.2b	Construction of 550mm nominal dia. Bored cast-in-situ piles passing through top slag deposit and terminated within underlying weathered rock layer (below virgin soil) with a socket length not less than 3 times dia. using cement concrete (cement not less than 400 Kg/cum. Consumption of cement will be recorded at site and will be considered actual for reconciliation purpose.) of grade M-25, providing & fixing one no. 40mm ID PVC pipe with minimum wall thk. of 4mm (schedule 80) as per specifications including cost of plant and equipment, temporary casing pipes, concrete, PVC pipes, labour, materials (reinforcement will be paid under item No.22.10) etc. complete, rate up to 20m depth below cutoff level. (Cement will be supplied by BHEL free of cost as per SCC).	RM	19,008	
22.3	Testing of piles (Cost of construction of 450/550mm nominal dia Bored cast in-situ piles required for carrying out initial load tests of piles shall be paid as per relevant items of 22.2a/22.2b).			
22.3.1	Conducting initial vertical load tests by direct loading on piles including finishing pile head, supply and erection of all kentledge, labour, excavation, backfilling, compaction etc. all complete.	NOS.	4	
22.3.2	Same as item No. 22.3 but for routine vertical load test by direct loading.	NOS.	36	
22.3.3	Same as item No. 22.3 but for initial lateral load test by direct loading.	NOS.	6	

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
22.3.4	Same as item No. 22.3 but for routine lateral load test by direct loading.	NOS.	36	
22.3.5	Same as item No. 22.3 but for initial pullout test by direct loading.	NOS.	4	
22.3.6	Same as item No. 22.3 but for routine pullout test by direct loading.	NOS.	36	
22.4a	Empty boring 450mm dia in ordinary soil or top slag deposit.	RM	1,560	
22.4b	Empty boring 550mm dia in ordinary soil or top slag deposit.	RM	1,040	
22.5	Supplying,bending, binding, transporting and placing in position following types of HSD bars reinforcement conforming to IS:1786 of minimum grade Fe 415 of all diameters and at all elevations using approved quality binding wires as per specifications and drawings for piling work. (TMT Reinforcements will be supplied by BHEL free of cost as per SCC).	MT	940	
22.6	Conducting Cross hole Ultrasonic testing of piles through pipe sleeves provided in piles, interpretation & analysis of test data by engaging a competent independent agency including supply & arrangement of testing equipments, making required platforms etc all complete as per specifications.	NOS.	300	
22.7	Supply of M S plates, bending, fabrication, welding, driving permanent steel casing for bored cast-in-situ pile including cost of all materials, labour etc. complete.	MT	10	
24	Soil Investigation			
24.1	Boring upto the depth of 20m or upto a depth required for necessary collection of data for identifying rock layer for termination of pile, whichever is more through top blast furnish slag deposit and bottom virgin soil and rock layer of sufficient diameter using Bellor method including taking out undisturbed soil samples, maintaining necessary driving records of standard penetration test at various depths, identifying the rock layer for termination of pile including back filling with sand and furnishing the necessary reports and data in the bore log form, to the Engineer. (One transparency and six copies each).	Nos.	6	

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
24.2	Digging trial pits, taking undisturbed/disturbed soil samples and carrying out plate load test as per specification at 2m depth from Terrace level (TC) using 600X600mm plates, including de- watering, if required and back filling after tests, and furnishing the necessary reports and data in required form, to the Engineer.	Nos.	3	
25	ENABLING CIVIL WORKS			
25.1	Sand filling (river sand) in plinth in layers not exceeding 15cm as directed by BHEL and consolidating same by thorough saturation with water and ramming complete including the cost of supply of sand. (Payment to be made on measurement of finished qty).	CUM	50	
25.2	Concrete of grade M7.5 as filling course at any level below foundations, drain, mass dumps, floors with 40 mm nominal size graded aggregate, materials, labour etc. complete. (Cement - PPC/OPC/PSC to be supplied by the vendor with test certificate from direct manufacturer of ACC /ULTRATECH /CETURY /BIRLA /LAFARGE /INDIA CEMENT etc).	CUM	75	
25.3	Reinforced/ plain cement concrete grade M-25 with approved stone chips 20mm down for floor, drain etc excluding cost of shuttering and reinforcement if any but including all materials, labour, curing etc complete all the levels (cement - PPC/OPC/PSC to be supplied by the contractor with test certificate from direct manufacturer of ACC /ULTRATECH /CETURY /BIRLA /LAFARGE /INDIA CEMENT etc).	CUM	265	
25.4	Reinforced/ plain cement concrete 1:2:4 with approved trap stone chips 20mm down for floor, drain etc excluding cost of shuttering and reinforcement if any but including all materials, labour, curing etc complete all the levels (cement - PPC/OPC/PSC to be supplied by the contractor with test certificate from direct manufacturer of ACC /ULTRATECH /CETURY /BIRLA /LAFARGE /INDIA CEMENT etc).	CUM	300	
25.5	Hire and labour charges for 25mm thick shuttering for bldg. works for concrete foundations, floor/roof slabs, beams, lintels, columns, chajja, fins etc. including fitting, fixing and striking out carefully after completion of work for below ground and upto 6m height from finished floor lvl..			

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
25.5a	Without vertical props.	SQM	410	
25.5b	With vertical props at all levels.	SQM	105	
25.6	Supply, Transporting, straightening, cutting, bending, placing at any level, binding in position mild steel reinforcements in concrete including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings.(Contractor to provide M S round from SAIL /TISCO / IISCO / SRMB / SHRICON / SHYAM STEEL etc.)	MT	3	
25.7	Supply, Transporting, straightening, cutting, bending, placing at any level, binding in position high yield strength steel reinforcements in concrete including cost of reinforcement and binding wire, labour etc. complete all as per specifications & drawings.(Contractor to provide TMT bar Fe-415 quality from SAIL /TISCO / IISCO / SRMB / SHRICON / SHYAM STEEL etc.)	MT	49	
25.8	Brick work in cement mortar (1:6) in foundation, plinth, pier, abutment, wing wlls, drains, culvert etc including all materials, labours, scaffolding and other incidental etc. complete. (Cement - PPC/OPC/PSC to be supplied by the contractor with test certificate from direct manufacturer of ACC /ULTRATECH /CETURY /BIRLA /LAFARGE /INDIA CEMENT etc).			
25.8a	Ordinary bricks / fly ash bricks, Class designation 50, below plinth lvl.	CUM	115	
25.8b	Ordinary bricks / fly ash bricks, Class designation 50, above plinth lvl upto 7,5 M height.	CUM	270	
25.9	12.5 cm thick brick work in cement mortar (1 cement :4 sand) including cost of scaffolding and other incidental work etc. completed. (Cement - PPC / OPC / PSC to be supplied by the contractor with test certificate from direct manufacturer of ACC / ULTRATECH / CETURY / BIRLA / LAFARGE / INDIA CEMENT etc).			
25.9a	Ordinary bricks / fly ash bricks, Class designation 50, below plinth level.	SQM	200	
25.9b	Ordinary bricks / fly ash bricks, Class designation 50, above plinth lvl upto 7,0 M height.	SQM	200	

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
25.10	Plaster to wall floor, slab soffits, fins, sills etc. with sand cement mortar including rounding off or chenefering corners as directed and racking out joints or roughening of concrete surface including chipping & application of cement slury where necessary etc complete as per drawing and direction of engineer. (Cement - PPC/OPC/PSC to be supplied by the contractor with test certificate from direct manufacturer of ACC /ULTRATECH /CETURY /BIRLA /LAFARGE /INDIA CEMENT etc).			
25.10a	With 1:6 cement mortar average 12.5mm thick plaster below GL	SQM	80	
25.10b	With 1:6 cement mortar average 12.5mm thick plaster above GL	SQM	900	
25.10c	outside plaster With 1:6 cement mortar average 15 mm thick above GL.	SQM	900	
25.11	Supply, fabrication, erection and painting of Structural steel work in columns, beams, wind ties, etc with simple rolled structural members connected to one with another with brackets gusset cleats, bolts and nuts or welding etc. as per design & direction complete including fabrication, hoisting & erection including all materials, labour etc. complete with one coat of primer and two coats of synthetic enamel painting. (Contractor to provide Structural steel from JINDAL/SAIL /TISCO / IISCO / SRMB / SHRICON / SHYAM STEEL / RINL etc with test certificate.)	MT	35	
25.12	Supply, fabrication, erection and painting of steel work with tubular sections as per IS 1161& 1239 for roof truss, purlin etc including all materials conforming to relevant IS codes, labour etc as per drawing, specification and direction of engineer with one coat of primer and two coats of synthetic enamel painting. (Contractor to provide structural steel from JINDAL/ BANSAL /TATA/SHYAM STEEL/ RINL etc)	MT	35	
25.13	Providing asbestos cement 6 mm corrugated sheet of Konark/ Everest or equivalent for roofing & wall, fitted and fixed with 8mm dia 'J' or 'L' hook bolts and nuts, sheet bolts, limpet & bitumen washer and putty complete including the cost of A C sheet, carriage, taxes etc as per drawing and specification.	SQM	2350	

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
25.14	Asbestos sheet ridging with 230mm lap each way, fitted and fixed with necessary hook bolts, nuts, screws, washers etc complete including the cost of A C sheet ridge, carriage, taxes etc as per drawing and specification.	RM	130	
25.15	Providing, transporting, fixing of MS foundation/anchor bolt (Grade-1 of IS:432 & IS:2062) assembly in concrete along with nuts, lock nuts, 25mm dia, 950mm long including furnishing of labour, materials, welding, etc.all complete as per specification, drawing and instruction of the engineer. (vendor to supply all material).	KG	2800	
25.16	Supplying, fitting and fixing openable steel windows conforming to us IS:1036-1975 and IS:7452-1974 with non friction projecting type of hinges fitted with revetts or nut bolt system as directed, glazing cleats, lugs, two nos m s anodised peg stays and fastner for each window of size 900mmX1200mm, 4mm thick clear glass pane (each glass max size 450mmX450mm), including fixing in position, fixing lugs in cement concrete 1:2:4 with stone chips 12.5mm down cutting holes & mending goods damages, 10mm dia ms round guard bar welded horizontally 125 c/c with each window etc. complete with one coat of primer and two coats of synthetic enamel finish in all respect.	SQM	32	
25.17	Supplying, fitting and fixing fixed steel windows conforming to us IS:1036-1975 and IS:7452-1974 with glazing, cleats, lugs, 4mm thick clear glass pane (each glass max size 450mmX450mm), etc. including fixing in position, fixing lugs in cement concrete 1:2:4 with stone chips 19mm down cutting holes & mending goods damages, with 10mm dia ms round guard bar fixed horizontally 125 c/c etc.complete with one coat of primer and two coats of synthetic enamel finish in all respect.	SQM	75	
25.18	Priming one coat to timber or steel or plastered surface or other metal surface with ready mix paint of approved quantity including smoothening of surface by sand papering etc complete.	SQM	250	
25.19	Painting two coats with best quantity synthetic enamel paint ready mix oil bound paint of approved make and brand including smoothening surface by sand pepering etc. including using approved putty etc. on the surface if necessary.			
25.19a	On steel or other metal or wooden surface with super gloss.	SQM	250	

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
25.20	3 coats white washing with line including cleaning and smoothening surface thoroughly to give an even shade.	SQM	450	
25.21	Providing Plaster of Paris (birla white or equivalent) 2 mm thick punning over finished plaster surface and finished with smooth surface as per specification at all levels.	SQM	150	
25.22	Two coats of water proofing cement paint of Seacem or equivalent make & shade applied on outer wall including scraping the surface thoroughly on plastered or concrete surface (manufacturers specification to be followed) at all levels including all materials, labours, scaffolding etc. complete as per direction of engineer.	SQM	1400	
25.23	Supply, manufacturing, fixing M S Sliding door made of M S anle frame / channel/flats /msround and 2mmthick M S sheet with necessary roller, size of opening 4M (w)X 5M (H), shutter size2.1X5.1M (approx), with all embedments, materials, labour, with one coat of primer followed by two coats of synthetic enamel paint finish, etc complete.	SQM	80	
25.24	Providing attach toilet with following facilities as directed by BHEL: (a) Inside size of toilet 1.5Mx1.35M , (b) 5mm thick white colour ceramic floor tile & inside walls tile upto 1.2 M height from finish floor, (c) one white vitreous wash basin 550x400 mm (Hindustan make or equivalent) with CI bracket, 15 mm cp brass pillar taps, 32 mm PVC waste water pipe, 32mm CP brass waste,one CP towel rail 550mm long, one best quality 550x400mm mirror etc complete, (d) one European type WC Pan with seat and lid black colour, low level 10 lts capacity white PVC flushing cistern, etc (e) all inside pipe lines shall be 15mm /20mm PVC & concealed pipes, (f) main external supply water pipe line shall be 25mmdia PVC of 6 M, complete in all respect including testing.(g) Soil pipe shall be min 75mm dia CI for below floor if any and outside shall be 100mm pvc of supreme or equivalent. Masonry & plastering will be paid as per respective items. Price to be quoted as lumsum for each set of toilet.	SET	4	

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
25.25	<p>Providing common toilet with following facilities as directed by BHEL: (a) Inside size of toilet 6.0Mx2.7M, (b) 5mm thick white colour ceramic floor tile and inside walls tile upto 1.35 M height from finish floor, (c) two white vitreous wash basin 550x400 mm (Hindustan make or equivalent) with CI bracket, 15 mm cp brass pillar taps, 32 mm PVC waste water pipe, 32mm CP brass waste, two CP towel rail 550mm long, two best quality 550x400mm mirror etc complete in all respect, (d) two WC chamber with European type WC Pan with seat and lid black colour, low level 10 lts capacity white PVC flushing cistern, etc complete in all respect, (e) all inside pipe line shall be 15mm /20mm PVC and concealed pipes, (f) main supply external supply water pipe line shall be 25mm dia PVC of 12 M, (g) one bathroom with one 15 CP tap, one CP shower,</p> <p>(h) two nos flat back white vitreous urinal (half stall urinal) 610mm x 400mm x 380mm with C I automatic cistern 5 litre with 20mm syphon, C I bracket, necessary GI pipe connection with urinal, pvc waste pipe etc. complete in all respect, (i) Soil/ drain pipe shall be min 75mm dia CI for below floor inside if any and outside shall be 100mm dia PVC of supreme or equivalent. Masonry & plastering will be paid as per respective items. Price shall be quoted as lumpsum for each set of common toilet.</p>	SET	1	
25.26	Consolidation of subgrade/ existing surface with 12 T power roller or vibromax including making good the undulations with earth and rerolling the subgrade for road, hard surfacing of equipment store, assembly yard etc as directed by BHEL.	SQM	13000	
25.27	Providing and Laying water bound macadam average thickness 75mm base for hard surfacing of open equipment store, preassembly yard etc in layers of required thickness with stone aggregate 75mm to 45mm size stone screening and binding material including screening, sorting, spreading and consolidation with power road roller 12T including carriage spreading and consolidation of blinding material moorum etc Including cost of material,labour,all complete.	SQM	450	
25.28	12 mm thick cement plaster (1:6) with 1mm neat cement punning for drain etc complete with all materials including cement, labour etc as directed by BHEL.	SQM	90	

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
25.29	Supplying, fabrication and installation of natural colour matt finish 10-12 micron anodised aluminium (Indal or equivalent section) framework for false ceiling with 12 mm thick SITATEX random perforated white ceiling tiles (610 mm x 610 mm) for false ceiling including vertical drops wherever required, of IS approved extruded sections with 35mm x 25mm x 1.2 mm thick main tee placed @ 614 mm c/c grid pattern and 25mm x 25mm x 1.2mm Aluminium cross tee with Al. angle at the periphery with the walls, the main runners to be suspended from roof truss by 4mm GI wire at suitable spacing and 150mm long special J adjustors with 100mm longthread for level adjustment upto 0.25mm with double nuts and washers. The GI wire to be suspended by MS Cleat of size 50 x 50 mm x 3 mm fixed to RCC slab by special fasteners, including fixing of ceiling boards and cost of all accessories, as per specification and direction of Engineer in charge.	SQM	450	
25.30	Providing and laying of 2mm thick PVC flooring & 100mm high skirting with all materials and labour etc complete..	SQM	450	
25.31	Providing PVC (polypropylene random co-polymer PP-R type - 3) pipe and fittings and fixtures of Supreme or equivalent make with all materials, labour etc complete for drinking water .			
25.31a	for external 32mm dia	RM	25	
25.31b	for external 40mm dia	RM	50	
25.32	Providing PVC pipe with fittings and fixtures of Supreme or equivalent make with all materials, labour etc complete for external sewer line / waste water line connection upto open drain or manhole to manhole / septic tank / soak pit, as directed by BHEL.			
25.32a	for external 75mm dia	RM	30	
25.32b	for external 100mm dia	RM	30	

SL NO	DESCRIPTION	UNIT	QTY	TOTAL AMOUNT (IN PERCENT W. R. T. GRAND TOTAL)
25.33	Providing and fixing of wooden solid flush door with commercial ply finish, fitted with MS hinges, one each of 150 mm aluminium tower bolt, 16X300mm long Al sliding door bolt & 100mm aluminium handle, finished with one coat of primer & two coats of synthetic enamel paint etc complete.			
25.33a	30 mm thick	SQM	12	
25.33b	35 mm thick	SQM	5	
25.34	Providing and fixing of wooden frame second class sisoo or equivalent for door frame including fixing on wall with ms cleats/flats and embeded in concrete, finished with one coat of primer & two coats of synthetic enamel paint etc with all labour & materials complete.	CUM	0.40	
	TOTAL PRICE			100%
27	GENERAL			
25.1	For items not covered under items above, quote % above or below the Delhi Schedule of rates 2007.			
	a) Rate for complete item			
	b) Rate for supply of material			
	c) Rate for supply of labour			