

ANNEXURE-I

BILL OF QUANTITY-CUM-PRICE SCHEDULE

Name of Project : 400KV SUBSTATION AT BAWANA
Name of Work : CIVIL WORKS OF YARD .

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
1	Earthwork in excavation over areas (exceeding 30cm in depth 1.5m in width as well as 10sqm on plan) including dewatering as necessary of rain water/subsoil seepage water and disposal of excavated earth upto 100m and lift upto 3.5m, disposed earth to be levelled and neatly dressed.				
(a)	All kinds of soil.	16500	cum	91.50	1509750.00
2	Earthwork in excavation in foundation trenches or drains (not exceeding 1.5m in width as well as 10sqm on plan) including dewatering as necessary of rain water/subsoil seepage water and dressing of sides and ramming of bottoms, lift upto 3.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 100m.				
(a)	All kinds of soil.	5300	cum	93.55	495815.00
3	Filling available excavated earth (including rock) in trenches, plinth, sides of foundations, etc., in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead upto 100m and lift upto 3.5m.	14000	cum	30.25	423500.00
4	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 3.0 m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20cm in depth including consolidating each deposited layer by ramming,watering etc.and disposing of surplus excavated soil as directed within a lead of 100m.				
(a)	All kinds of soil				
4.1	Pipes, cables etc, not exceeding 80mm dia.	50	cum	58.50	2925.00
4.2	Pipes, cables etc. exceeding 80mm dia. but not exceeding 300 mm dia.	50	cum	95.55	4777.50
4.3	Pipes, cables etc. exceeding 300mm dia but not exceeding 600mm	50	cum	149.15	7457.50

5	Carriage & disposal of surplus excavated earth/rock beyond initial lead by mechanical means not necessarily all the times on pucca roads, including loading, unloading, dressing of excavated material, etc., complete as per specifications -.				
(a)	Lead upto 1 km.	6550	cum	34.77	227743.50
(b)	Lead upto 3 km.	500	cum	43.96	21980.00
(c)	Lead upto 5 km.	200	cum	52.61	10522.00
6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.				
(a)	1:2:4 (1 cement : 2coarse sand : 4 graded stone aggregate 20mm nominal size)	50	cum	1843.00	92150.00
(b)	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size)	100	cum	1549.15	154915.00
(c)	1:4:8(1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)	900	cum	1404.70	1264230.00
7	Extra for providing and mixing water proofing material 'Impermo' or equivalent in cement concrete work in the proportion recommended by the manufacturer.	5000	kg	19.25	96250.00
8	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for RCC structural elements excluding the cost of centering, shuttering, finishing and reinforcement including admixtures in recommended proportions (as per IS 9103) to accelerate, retrard setting of concrete, improve workability without impairing strength and durability. - M25 grade				
(a)	All works (rafts, columns,walls & plinth beams) upto plinth level.	4500	cum	2368.05	10656225.00
9	Centering and shuttering including strutting, propping, etc., and removal of form for:				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	2500	sqm	61.10	152750.00
(b)	Columns, Pillars, Piers, Posts and Struts .	5500	sqm	135.80	746900.00
(c)	RCC walls at all levels (any thickness).	10000	sqm	106.40	1064000.00
(d)	Suspended floors, roofs, landings, balconies and access platform.	100	sqm	111.20	11120.00
10	Steel reinforcement -Cold twisted bars /TMT				
(a)	Including supply and bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	20000	kg	21.85	437000.00

(b)	Excluding supply but including bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete. (See Note No:1)	430000	kg	3.50	1505000.00
11	Structural steelwork welded in built up sections like edge protection angles,insert plates with lugs & framed work including providing, cutting, hoisting, fixing in position/ embedding in concrete and applying a priming coat of approved steel primer all complete.	25000	kg	24.30	607500.00
12	Steelwork welded in built up sections/framed work including providing ,cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc., as required.				
(a)	In gates (as per clause 15.21.02 of Customer spec.) and similar works.	2000	kg	29.15	58300.00
13	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade:				
	Two or more coats on new work.	100	sqm	24.25	2425.00
14	Providing & fixing in position precast cement concrete trench covers or perforated covers wherever necessary at various elevations in all kinds of works including lifting hooks ,moulding, formwork, mixing, laying out, compacting and curing, storing, transportation, erection without damage, setting in position with cement and sand mortar, grouting etc all as per specs, drawings and directions of Engr-in-Charge but excluding the cost of reinforcement, inserts, edge angles, etc.				
	Grade of concrete shall be M25	270	cum	3500.00	945000.00
15	Providing and fixing (all dia & length) foundation bolts in position with help of proper templates including supply of templates ,nuts and washers all complete as per specs, drawings & directions of Engr-in-Charge	55000	kg	40.15	2208250.00
16	Extra over Item above for providing galvanised bolts (Mass of zinc coating = 610gms/sqm), nuts & washer .	55000	kg	5.00	275000.00

17	Fixing (all dia & length) foundation bolts in position with help of proper templates(template to be supplied by contractor) all complete as per specs, drawings & directions of Engr-in-Charge.Bolts to be provided by BHEL free of cost.	2500	kg	3.00	7500.00
18	Preparation of subgrade by excavating earth to an average of 22.5cm depth, dressing to camber and consolidating with road roller including making good the undulations etc., and disposal of surplus earth lead upto 50m.	2700	sqm	21.50	58050.00
19	Consolidation of subgrade with power road roller of 8 to 12 tonne capacity including making good the undulations etc. with earth or quarry spoils etc. and rerolling the subgrade.	2700	sqm	0.65	1755.00
20	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	2700	sqm	2.90	7830.00
21	Providing and Laying WBM with specified size of stone aggregates, screening and moorum/ blinding materials including screening, sorting, spreading to template and consolidation with power road roller of 8 to 10 tonne capacity etc., complete. (Payment will be made for compacted layers only).				
(a)	Subbase with stone aggregate 90mm to 45mm including stone screening 13.2mm size and moorum/blinding material.	650	cum	689.91	448441.50
(b)	Base course with stone aggregate 63mm to 45mm including stone screening 13.2mm size and moorum/blinding material.	400	cum	565.84	226336.00
(c)	Base course with stone aggregate 53mm to 22.4 mm including stone screening 11.2mm size and moorum/blinding material.	400	cum	717.13	286852.00
22	Providing and laying premix bituminous macadam base course with stone aggregate of quality size and grading as specified in CPWD specification and straight run bitumen of grade 80/100 @ 4% by weight of total mix including hot mixing of stone aggregate and bitumen in hot mix plant, transporting mixed material and laying mixed material with paver finisher to the required level and grade, rolling with road roller of 8 to 10 tonne capacity to achieve the required compaction and density.				
	50 mm compacted thickness.	135	cum	2268.20	306207.00

23	Providing and laying seal coat of premixed fine aggregate (passing 2.36 mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade 80/100 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling and finishing with road roller all complete.	2700	sqm	19.30	52110.00
24	Providing and laying 75mm thick factory made anti skid precast interlocking cement concrete (grade M25) paver blocks in required shape and pattern laid on 50 mm thick compacted bed of coarse sand ,filling the joints with coarse sand etc .all complete . as per direction of Engineer-in-Charge .	1350	Sqm	200.00	270000.00
25	Providing and laying at or near ground level or alongsides of road etc.precast cement concrete in kerb stone, edgings etc. as per approved pattern and setting in position with cement mortar 1 : 3 (1 Cement : 3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not be more than 5mm),making drainage opening wherever required complete including the cost of required centring, shuttering etc.as per direction of Engineer-in-Charge.				
	Grade of concrete shall be M25.	150	cum	2200.00	330000.00
26	Providing and laying non-pressure NP2 class (light duty) RCC pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc., complete.				
(a)	100mm dia. RCC pipe	10	RM	134.90	1349.00
(b)	150mm dia. RCC pipe	20	RM	154.75	3095.00
(c)	250mm dia. RCC pipe	50	RM	191.70	9585.00
(d)	300mm dia. RCC pipe	50	RM	259.45	12972.50
(e)	450mm dia. RCC pipe	10	RM	379.05	3790.50
27	Providing and laying non-pressure NP3 class (light duty) RCC pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc., complete.				
(a)	250mm dia. RCC pipe	20	RM	200.00	4000.00
(b)	300mm dia. RCC pipe	20	RM	300.00	6000.00
(c)	450mm dia. RCC pipe	10	RM	425.00	4250.00

28	15 mm cement plaster on the rough surfaces of walls etc. of mix :				
	1:6 (1 cement : 6 coarse sand)	50	sqm	54.15	2707.50
29	12 mm cement plaster of mix:				
	1:6 (1 cement : 6 coarse sand)	50	sqm	46.60	2330.00
30	Finishing walls with water proofing cement paint "Snowcem - Plus" of M/s Snowcem India Ltd., or equivalent of required shade :				
	New work (Two or more coats applied @ 3.84 kg/10 sqm)	100	sqm	23.10	2310.00
31	Providing and placing in position suitable PVC water stops conforming to IS 12200 of Deep-Jyoti or equivalent for construction/expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete.				
	Serrated with central bulb(225mm wide,8-11mm thick)	200	meter	368.90	73780.00
32	Providing and laying stone aggregate in switch yard areas in 100mm thick layer using 40 mm aggregates size .Before laying the stone aggregates , the yard surface shall be treated with antiweed treatment all complete as per direction of Engineer in Charge. (The rate shall be inclusive of all materials ,labour,loading,unloading and surface preparation etc. required for aggregate laying and antiweed treatment).	110000	sqm	75.00	8250000.00
33	Providing and fixing 3.0 meter high PVC coated GI chain link fencing as per Customer's specification clause no. 15.21.01(Section -VI ,Part-B,Volume-IV) including construction of toe wall ,plastering ,coping ,painting and weep holes etc. all complete.(The rate shall include all items and activites as per specification including supply of all materials,labour at site.)	1350	RM	1900.00	2565000.00

34	Grouting of block outs, pockets, foundations, bolts holes and underside of base plates with ready mixed grout or grout consisting of 2 parts by weight of sand, 1 part by weight of cement including approved plasticizer, non-shrink admixture, in the required proportion as recommended by manufacturer/Engineer, including placing, curing, cleaning, surface preparation, testing, etc. complete with labour, materials, equipment, handling, testing, etc. all complete as per specifications, drawings and instructions of the Engineer. Crushing strength of grout shall be one grade higher than that of base concrete.	5	cum	10000.00	50000.00
35	Providing high strength (minimum characteristic compressive strength of 60 N/sqmm at 28 days) ready mixed non shrink ,chloride free,cement based,free flowing,non metallic grout as recommended by manufacturer.	1	cum	15000.00	15000.00
	Total Amount				35982736.50

NOTE

- 1** *Reinforcement steel shall be supplied by BHEL free of cost as per norms indicated in conditions of contract.*
The rate quoted against Item No: 10(b) above shall be deemed to be inclusive of cost against all activities required including transportation of material from nearest SAIL stockyard.