

ANNEXURE-I

BILL OF QUANTITY-CUM-PRICE SCHEDULE

Name of Project:

220KV SUBSTATION AT PIPAVAV.

Name of Work :

CIVIL WORKS IN SWITCHYARD.

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.	6000	cum	91.50	549000
(b)	Ordinary rock	10000	cum	139.30	1393000
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.	1300	cum	93.55	121615.00
(b)	Ordinary rock.	200	cum	153.90	30780.00
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.	11000	cum	30.25	332750.00
4	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m including getting out the excavated soil, and then returning the soil as required, in layers not				
	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 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.	1500	cum	34.77	52155.00
(b)	Lead upto 3 km.	1500	cum	43.96	65940.00
(c)	Lead upto 5 km.	2000	cum	52.61	105220.00
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	10	cum	1843.00	18430.00
(b)	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size	100	cum	1588.35	158835.00
(c)	1:4:8(1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)	700	cum	1404.70	983290.00
7	Extra for providing and mixing water proofing material 'Impermo' or equivalent in cement concrete work in the proportion recommended by the manufacturer.	25000	kg	19.25	481250.00
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.	4000	cum	2368.05	9472200.00
(b)	All works from plinth level to all levels (including fire walls) .	50	cum	2495.40	124770.00

9	Centering and shuttering including strutting, propping, etc., and removal of form for:				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	2000	sqm	61.10	122200.00
(b)	Columns, Pillars, Piers, Abutments, Posts and Struts	4500	sqm	135.80	611100.00
(c)	RCC walls at all levels .	7000	sqm	106.40	744800.00
(d)	Suspended floors, roofs, landings, balconies and access platform.	50	sqm	111.20	5560.00
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.	10000	kg	21.85	218500.00
(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)	340000	kg	3.00	1020000.00
11	15 mm cement plaster on the rough side of single or half brick wall of mix :				
	1:6 (1 cement : 6 coarse sand)	425	sqm	54.15	23013.75
12	12 mm cement plaster of mix:				
	1:6 (1 cement : 6 coarse sand)	425	sqm	46.60	19805.00
13	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)	850	sqm	23.10	19635.00
14	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :				
	Two or more coats on new work	25	sqm	24.25	606.25
15	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.	20000	kg	24.30	486000.00

16	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.				
	In gratings, frames, ladders, railings,rails, brackets, gates and similar works.	2000	kg	29.15	58300.00
17	Providing & fixing in position precast cement concrete trench covers, RCC grills, etc., at various elevations in all kinds of work including 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.	160	cum	3500.00	560000.00
18	Providing and fixing 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 the cost of required centring, shuttering and finishing smooth with 6mm thick cement plaster 1:3(1 cement:3 fine sand)on exposed surfaces complete.				
	1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size)	125	cum	2391.00	298875.00
19	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.	32000	kg	40.15	1284800.00
20	Extra over Item above for providing galvanised bolts (Mass of zinc coating = 610gms/sqm), nuts & washer	32000	kg	5.00	160000.00

21	Fixing (all dia & length) foundation bolts in position with help of proper templates(to be supplied by contractor) including nuts and washers 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
22	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.	2625	sqm	21.50	56437.50
23	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.	2625	sqm	0.65	1706.25
24	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	2625	sqm	2.90	7612.50
25	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.	394	cum	689.91	271824.54
(b)	Base course with stone aggregate 63mm to 45mm including stone screening 13.2mm sizeand	328	cum	656.84	215443.52
(c)	Base course with stone aggregate 53mm to 22.4 mm including stone screening 11.2mm size and moorum/blinding material.	328	cum	717.13	235218.64
26	2.5 cm premix carpet surfacing with 3 cum of stone chippings 10mm nominal size per 100sqm and bitumen emulsion (Min. 65% bitumen content) of approved quality using 96 kg per cum of chippings including a tack coat of 1 kg bitumen emulsion per sqm of road surface including consolidation with road roller of 6 to 9 tonne capacity etc., complete.	2625	sqm	60.00	157500.00

27	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.	2625	sqm	19.30	50662.50
28	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
29	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
30	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
31	Providing and laying stone aggregate in switch yard areas in two layers of 75 mm each using 20 to 40 mm aggregates size in top layer and 20mm size aggregate in bottom layer .Before laying the stone aggregates , the yard surface shall be treated with antiweed treatment all complete as per Customer's specification. (The rate shall be inclusive of all materials ,labour,loading,unloading and surface preparation etc. required for aggregate laying and antiweed treatment)	26000	sqm	105.00	2730000.00

32	Providing and fixing PVC coated GI chain link fencing including all allied activities, all complete as per Customer's specification (Clause no:14.7 Vol-III ,Section :D4.5 ,spec. no. TCE 4916A-H-500-001) .(Rates shall be inclusive of all items like angles,pipes, chainlink fence, barbed wire, toe wall construction including coping , PCC, etc all complete as per specifications.)	700	RM	1900.00	1330000.00
NOTE 1 Reinforcement steel shall be supplied by BHEL <u>free of cost</u> 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.					