

ANNEXURE-I (PART-A)

BILL OF QUANTITY CUM PRICE SCHEDULE					
Name of Project		400/220 KV Switchyard at North Karanpura			
Name of Work		Civil Work of 220kV Switchyard works Including Transformer & Reactor Foundations, Road work (excluding Building works, gravelling, fencing,			
PART A- 220kV SWITCHYARD AREA, TRANSFORMER, REACTOR FOUNDATIONS					
S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
1.1	Earthwork in excavation by mechanical means (Hydraulic excavator)/manual means 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.	11750	cum	155.60	1828300.00
(b)	Ordinary rock	1250	cum	244.60	305750.00
1.2	Extra for every additional lift of 1.5 m or part thereof in excavation and banking excavated or stacked materials.				
(a)	All kinds of soil	6300	cum	46.25	291375.00
(b)	Ordinary rock	700	cum	82.95	58065.00
2	Earthwork in excavation by mechanical means (Hydraulic excavator)/manual means 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.	1750	cum	157.50	275625.00
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.	9850	cum	112.40	1107140.00
4	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.	3360	cum	99.44	334118.40
(b)	Lead upto 3 km.	960	cum	127.01	121929.60
(c)	Lead upto 5 km.	480	cum	153.07	73473.60
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.				
(a)	M15	10	cum	5466.3	54663.00

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(b)	M10	10	cum	4672.50	46725.00
(c)	M7.5	600	cum	4301.15	2580690.00
6	Extra for providing and mixing water proofing material 'Impermo' or equivalent in cement concrete work in the proportion recommended by the manufacturer.	300	kg	48.15	14445.00
7	Supplying and filling in plinth with Jamuna/local sand under floors,cable trenches including watering, ramming, consolidating and dressing complete.	700	cum	910.25	637175.00
8	Providing, laying and compacting boulder soiling of required thickness in foundations of equipment and under the floors as per direction of Engineer-in-Charge.	30	cum	1830.00	54900.00
9	Supplying chemical emulsion in sealed containers including delivery as specified.				
	Chloropyriphos emulsifiable concentrate of 20%	200	litre	185.95	37190.00
10	Applying three coat of residual petroleum bitumen of penetration 85/25 grade as per IS:702 of approved quality using 1.7 kg per sqm on the surface of foundation after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	11800	sqm	132.00	1557600.00
11	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for RCC structural elements including roads 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 reinforced cement concrete by using minimum 330kg of cement per cum of concrete.				
(a)	All works upto plinth level	3700	cum	6296.15	23295755.00
12	Centering and shuttering including strutting, propping, etc., and removal of form for:				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	1900	sqm	196.45	373255.00
(b)	RCC walls at all levels (any thickness).	7500	sqm	360.80	2706000.00
(c)	Suspended floors, roofs, landings, balconies,chajjas and access platforms at all levels.	20	sqm	401.65	8033.00

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(d)	Columns, Pillars, Piers, Posts and Struts .	5600	sqm	453.35	2538760.00
13	Steel reinforcement -Cold twisted bars /TMT- Fe 500 (To be procured from SAIL,TISCO,IISCO, JINDAL STEEL and RINL only)				
(a)	Including supply, straightening, cutting and bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	20000	kg	68.10	1362000.00
(b)	Excluding supply but including straightening, cutting,bending, binding, (i/c cost of binding wire), placing in position, etc., all labour & material, complete. (Reinforcement steel will be provided by BHEL)	265700	kg	13.00	3454100.00
14	Brickwork with F.P.S.bricks of class designation 75 in foundation and plinth in:				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	10	cum	4677.25	46772.50
15(a)	Structural steelwork welded in built up sections like edge protection angles, pipes, 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.	17400	kg	67.70	1177980.00
15(b)	Extra over item above for providing galvanising of minimum 610gm/sqm	1000	kg	9.70	9700.00
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.				
(a)	In frames, rails, ISMB, ISMC, gratings and similar works.	18300	kg	90.10	1648830.00
17	Providing & placing in position precast cement concrete trench covers or perforated covers wherever necessary at various elevations in all kinds of work including moulding, formwork, mixing, laying out, compacting and curing, storing, transportation, erection without damage 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 M30	100	cum	7140.00	714000.00

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18	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. (Note: For payment purpose the weight of Template will not be considered)	29400	kg	98.25	2888550.00
19	Extra over Item above for providing galvanised bolts (Mass of zinc coating = 800gms/sqm), nuts & washer .	29400	kg	12.00	352800.00
20	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. (Note: For payment purpose the weight of Template will not be considered)	1000	kg	12.00	12000.00
21	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)	250mm dia. RCC pipe	20	RM	468.60	9372.00
(b)	300mm dia. RCC pipe	20	RM	506.35	10127.00
(c)	450mm dia. RCC pipe	10	RM	705.90	7059.00
22	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	435.00	8700.00
(b)	300mm dia. RCC pipe	20	RM	545.00	10900.00
(c)	450mm dia. RCC pipe	10	RM	817.00	8170.00
23	Providing and placing in position suitable PVC water stops conforming to IS 12200 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(230mm wide,8-11mm thick)	125	meter	490.20	61275.00

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24	Grouting of block outs, pockets, foundations, bolts holes and underside of base plates with cement, sand aggregate (of size 6 mm and down) grout M-30 with non-shrink additive and shall be of strength not less than M30 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.	25	cum	9680.00	242000.00
25	Providing and supplying grating of 40mm thickness and opening size 30mmx100mm, with minimum thickness of main bearing bar 5mm including shot blasting, priming, finish painting and galvanising of minimum weight 610gms/Sqm etc.all complete .	1000	kg	85.00	85000.00
26	Filling of approved materials i/c cost of materials, labour and equipment for handling, transportation, placing and compacting as required to the required density and to the required elevations as per specification, drawings and directions of Engineer-in-Charge.				
	Broken/crushed/non crushed stone of size 40 to 60mm for placing over transformer grating.	20	cum	1332.00	26640.00
27	Site grading/land development works including rolling compacting and dressing all complete.				
(a)	Mass cutting including lift of 3.5 m.	8700	cum	60.00	522000.00
(b)	Backfilling from above excavated earth with proper compaction in layers of 20cm .	8700	cum	112.40	977880.00
(c)	Supply of earth at site including royalty, carriage and filling in specified areas in layers not exceeding 200mm depth, compacting under OMC to achieve 95% of Proctor density, finishing etc. all complete, for all leads and lift with all labour, material, tools, tackles, equipments, safeguards & incidentals as necessary as per specification and direction - of - Engineer -in- charge.	500	cum	320.90	160450.00
28	Demolishing brick work manually/by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in- charge.				
(a)	In cement mortar	5	cum	754.10	3770.50

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29	Demolishing RCC work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.	10	cum	1302.30	13023.00
				Total	52114066.60