

ANNEXURE-I

BILL OF QUANTITY-CUM-PRICE SCHEDULE

Name of Project: 400/132kv switchyard Extension at Rihand -III

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.	7000	cum	129.35	905450.00
(b)	Ordinary rock	350	cum	197.75	69212.50
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.	350	cum	130.80	45780.00
(b)	Ordinary rock.	50	cum	212.00	10600.00
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.	6100	cum	83.80	511180.00
4	Diluting & injecting chemical emulsion for PRE-CONSTRUCTIONAL ANTI-TERMITE treatment and creating a continuous chemical barrier under and all around the column pits, wall trenches, basement excavation, top surface of plinth filling, junction of wall & floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid , surroundings of pipes and conduits, etc complete as per specifications (Plinth area of the building at ground floor only shall be measured for payment).	500	sqm	90.00	45000.00
5	Supplying chemical emulsion in sealed containers including delivery as specified.				
	Chloropyriphos emulsifiable concentrate of 20%	50	litre	185.95	9297.50

6	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.	1300	cum	82.78	107614.00
(b)	Lead upto 3 km.	250	cum	104.98	26245.00
(c)	Lead upto 5 km.	100	cum	125.92	12592.00
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.				
(a)	Concrete mix of grade M15	10	cum	4514.05	45140.50
(b)	Concrete mix of grade M10	10	cum	3888.20	38882.00
(c)	Concrete mix of grade M7.5	160	cum	3593.30	574928.00
8	Extra for providing and mixing water proofing material 'Impermo' or equivalent in cement concrete work in the proportion recommended by the manufacturer.	50	kg	35.35	1767.50
9	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for RCC work including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement including admixtures in recommended proportions (as per IS 9103) to accelerate, retard setting of concrete, improve workability without impairing strength and durability. - M25 grade.				
a)	All works up to floor level V.	1200	cum	5242.15	6290580.00
b)	All works above plinth level upto floor V level.	50	cum	5781.50	289075.00
10	Centering and shuttering including strutting, propping, etc., and removal of form for:				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	600	sqm	166.90	100140.00
(b)	Columns, Pillars, Piers, Abutments, Posts and Struts	1500	sqm	365.60	548400.00
(c)	RCC walls at all levels (any thickness).	2650	sqm	285.15	755647.50
(d)	Suspended floors, roofs, landings, balconies and access platform.	60	sqm	488.05	29283.00
11	Steel reinforcement -Cold twisted bars /TMT- Fe500 (to be procured from SAIL ,TISCO, IISCO and RINL only)				
(a)	Including supply and bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	125000	kg	62.25	7781250.00

12	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 chlorinated rubber based zinc phosphate primer of minimum 50 micron dry film thickness (DFT) all complete.	19000	kg	66.50	1263500.00
13	Steelwork welded in built up sections/framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc., as required.				
	In rails,etc and similar works.	14000	kg	65.00	910000.00
14	Providing and fixing gates of MS angles finished by blast cleaning of steel surfaces to near white metal surface (Sa 2 1/2 Swedish standard) and applying inorganic zinc silicate primer of minimum 75 microns (DFT), followed by an intermediate coat of minimum 75 micron(DFT) epoxy based titanium dioxide/micaceous iron oxide, followed by finish painting with epoxy based colour pigmented finish poly amide cured paint. All paints including primer shall be of reputed brand/manufacturer and as approved by the Engineer.	3000	kg	90.00	270000.00
15	Providing,fixing and finishing of grating by blasting, cleaning to Sa 2 1/2 finish of swedish standard SIS-05-5900 all complete as per technical specification clause no 10.01.00 (vii) and direction of Engineer in Charge.	4300	kg	80.00	344000.00
16	Providing & fixing in position precast cement concrete trench covers, 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, and of following grade:				
	M25	45	cum	6000.00	270000.00
17	Providing and laying at or near ground level factory made kerb stone of M25 grade cement in position to the required line, level and curvature jointed 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 to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment).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.(Precast C.C kerb stone shall be approved by Engineer-in-charge).	2	cum	5046.80	10093.60

18	Providing and fixing (all dia & length) foundation bolts in position with help of proper templates including nuts and washers all complete as per specs, drawings & directions of Engr-in-Charge	3000	kg	86.55	259650.00
19	Extra over Item above for providing galvanised bolts (Mass of zinc coating = 610gms/sqm), nuts & washer	3000	kg	8.00	24000.00
20	Fixing (all dia & length) foundation bolts in position with help of proper templates including nuts and washers all complete as per specs, drawings & directions of Engr-in-Charge. Bolts to be provided by BHEL free of cost.	500	kg	7.00	3500.00
21	Preparation and consolidation of subgrade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5cm depth, dressing to camber and consolidating with road roller including making good the undulations etc., and re-rolling the sub grade and disposal of surplus earth lead upto 50m.	195	sqm	61.20	11934.00
22	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	195	sqm	7.75	1511.25
23	Supplying and stacking of graded stone aggregate at site of size range				
(a)	90mm to 45mm	45	cum	1010.75	45483.75
(b)	63mm to 45mm	155	cum	1100.80	170624.00
(c)	53mm to 22.4 mm	25	cum	1190.80	29770.00
24	Laying WBM with specified stone aggregate stone screening and blinding material including screening, sorting, spreading to template and consolidation with power road roller of 8 to 10 tonne capacity etc., complete (payment for stone aggregate, screenings, kankar, moorum and red bajri etc., to be made separately)				
(a)	Subbase with stone aggregate 90mm to 45mm including stone screening 13.2mm size.	25	cum	330.15	8253.75
(b)	Base course with stone aggregate 63mm to 45mm including stone screening 13.2mm size.	20	cum	330.15	6603.00
(c)	Base course with stone aggregate 53mm to 22.4 mm including stone screening 11.2mm size.	20	cum	330.15	6603.00
25	Supplying and stacking of stone screenings/chippings at site				
(a)	13.2 mm nominal size (Type A)	25	cum	1338.75	33468.75
(b)	11.2 mm nominal size (Type B)	15	cum	1425.85	21387.75
26	Supplying and stacking of moorum at site.	20	cum	624.45	12489.00

27	Providing and laying Bitumen Penetration Macadam with hard stone aggregate of quality, size and grading as specified, with bitumen of suitable penetration grade including required key aggregate as specified, spreading coarse aggregate with the help of self propelled/ tipper tail mounted aggregate spreader and applying bitumen by a pressure distributor and then spreading key aggregate with the help of aggregate spreader complete including consolidation with road roller of minimum 8 to 10 tonne capacity to achieve specified values of compaction and surface accuracy:				
	For 75mm compacted thickness using coarse aggregate of size 63-41mm graded @ 0.90 cum per 10 sqm key aggregate of size 20mm graded @ 0.18 cum per 10sqm. With paving asphalt grade 80/100 @ 68 kg/10sqm	125	sqm	505.60	63200.00
28	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.	125	sqm	150.90	18862.50
29	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.	125	sqm	61.30	7662.50
30	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	10	RM	342.45	3424.50
(b)	300mm dia. RCC pipe	10	RM	422.90	4229.00
(c)	450mm dia. RCC pipe	10	RM	620.85	6208.50
31	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)	300mm dia. RCC pipe	10	RM	500.00	5000.00
(b)	450mm dia. RCC pipe	10	RM	750.00	7500.00
32	Providing PVC pipe(150mm) in concrete(M15) for cable,road crossing including laying,fixing all complete as per direction of engineer-in-charge.	10	RM	850.00	8500.00

33	Providing HDPE pipe(150mm) in concrete(M15) for cable,road crossing including laying,fixing all complete as per direction of engineer-in-charge.	10	RM	1000.00	10000.00
34	Providing and placing in position suitable PVC water stops conforming to IS 12200 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)	30	meter	459.15	13774.50
35	Providing and laying stone aggregate in switch yard areas in two layers.The first layer shall be 75 mm thk. base course of 20 mm of nominal size and second layer surface course of 40mm nominal size. 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)	1000	sqm	145.00	145000.00
36	Providing and fixing 2.5meter high GI chain link fencing including all allied activities ,all complete and direction of Engineer -in -charge (Rates shall be inclusive of all items like angles,chainlink fence, barbed wire, toe wall ,PCC,blast cleaning & painting,etc) as per technical specification part II ,section VI ,clause no 9.00.00.	200	RM	3200.00	640000.00
37	Dismantling and stacking within 50 metres lead,fencing posts or struts including all earth work and dismantaling of concrete etc in base of: T' or 'L' iron or pipe	140	each	76.00	10640.00
38	Dismantaling barbed wire or flexible wire rope in fencing including making rolls and stacking within 50 metres lead.	35	kg	10.15	355.25
39	Demolishing cement concrete manually/by mechanical means including disposal of material within 50 metres lead as per direction of engineer-in-charge.	30	cum	413.65	12409.50
40	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.	5	cum	978.95	4894.75
41	Demolishing brickwork 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. In cement mortar	45	cum	566.60	25497.00

42	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.	15	cum	900.00	13500.00
43	Grouting of block outs, pockets, foundations, bolts holes and underside of base plates with grout of M30 grade 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.	10	cum	10000.00	100000.00
44	Removing, stacking, cleaning and resspreading of existing gravel In the switchyard area all complete as per direction of Engineer-in charge.	200	sqm	50.00	10000.00
				TOTAL	23011594.35