

BILL OF QUANTITY CUM PRICE SCHEDULE

Name of Project
Name of Work

: 400kV SWITCHYARD AT KOTHAGUDAM TPS
: CIVIL WORKS FOR 400KV SWITCHYARD

S.No.	Description of Item	Unit	Quantity	Unit Rate(Rs)	amount
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.	cum	13500	129.35	1746225.00
(b)	Ordinary Rock	cum	675	197.75	133481.25
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.	cum	3000	130.80	392400.00
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.	cum	10000	83.80	838000.00
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.	cum	6000	82.78	496680.00
(b)	Lead upto 2 km.	cum	100	93.94	9394.00
(c)	Lead upto 3 km.	cum	100	104.98	10498.00
(d)	Lead upto 5 km.	cum	100	125.92	12592.00
5	Supplying and filling in plinth with Jamuna/local sand under floors including watering, ramming, consolidating and dressing complete.	cum	150	749.30	112395.00
6	Providing, laying and compacting boulder soiling of required thickness in floor, foundations of equipment and under the floors as per direction of Engineer-in-Charge.	cum	125	1010.75	126343.75
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.				
(a)	M15	cum	525	4514.05	2369876.25
(b)	M10	cum	450	3888.20	1749690.00
(c)	M7.5	cum	25	3331.25	83281.25
8	Extra for providing and mixing plasticiser cum water proofing cement additives such as SIKA or FOSROC make or equivalent conforming to IS:9103. in cement concrete work in the proportion recommended by the manufacturer.	per 50 kg cement	4000	35.35	141400.00

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9	Providing and laying in position machine batched and machine mixed design mix M25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, 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 as per direction of Engineer-in-charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately).				
(a)	All works upto plinth level	cum	3100	5242.15	16250665.00
(b)	Add for using extra cement in the items of design mix over and above the specified cement content therein.	quintal	2000	589.80	1179600.00
10	Centering and shuttering including strutting, propping, etc., and removal of form for:				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	sqm	2500	166.90	417250.00
(b)	RCC walls at all levels (any thickness).	sqm	8000	285.15	2281200.00
(c)	Columns, Pillars, Piers, Posts and Struts .	sqm	3500	365.60	1279600.00
(d)	Lintels, beams, plinth beams and cantilevers.	sqm	200	262.25	52450.00
11	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 :				
(a)	Dumb bell with central bulb (180 mm wide, 8 mm thick)	meter	165	413.85	68285.25
12	Steel reinforcement -TMT Bars (Fe500 grade)				
(a)	Including supply (To be procured from SAIL/TATA STEEL/RINL) and straightning, cutting, bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete.all complete as per specification and directions of Engineer-in-Charge	kg	12000	62.25	747000.00
(b)	Excluding supply but including transporting from SAIL stockyard to site, straightening, cutting, bending, binding, (i/c cost of binding wire), placing in position, etc., all complete as per specification and directions of Engineer-in-Charge. (Reinforcement shall be supplied by BHEL as per conditions of contract)	kg	222500	10.50	2336250.00
13	Brickwork with F.P.S.bricks of class designation 75 in foundation and plinth in:				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	20	3316.55	66331.00
14	12mm cement plaster 1:6 (1cement :6 fine sand) finished with a floating coat of neat cement of mix:	sqm	50	142.42	7121.00
15	Preparation and consolidation of subgrade with power road roller of 8 to 10 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.	sqm	4400	61.25	269500.00
16	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	cum	660	7.75	5115.00
17	Suppling and stacking at site				

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S.No.	Description of Item	Unit	Quantity	Unit Rate(Rs)	amount
(a)	90 mm to 45 mm size stone aggregate	cum	600.00	1010.75	606450.00
(b)	63 mm to 45 mm size stone aggregate	cum	600.00	1100.80	660480.00
(c)	53 mm to 22.5 mm size stone aggregate	cum	500.00	1190.80	595400.00
(d)	Stone screening 13.2 mm nominal size (type A)	cum	400	1338.75	535500.00
(e)	Stone screening 11.2 mm nominal size (type B)	cum	100	1425.85	142585.00
(f)	Moorum	cum	665	624.45	415259.25
18	Laying spreading and compacting stone aggregate of specified sizes to WBM specifications including spreading in uniform thickness, hand picking, rolling with 3 wheeled road/vibratory roller 8-10tonne in stages to proper grade and camber, applying and brooming requisite type of screening/binding material to fill up interstices of coarse aggregate water and compacting to the required density (payment for stone aggregate, screenings, kankar, moorum and red bajri etc., to be made separately)	cum	500	330.15	165075.00
19	Providing and fixing in position 12mm thick bitumen impregnated fibre board conforming to IS: 1838, including the cost of primer, sealing compound in expansion joints.	per cm depth per cm width per 100 m length	400	167.35	66940.00
20	Providing and laying polythene sheet of 125 microns between the PCC and RCC slab all complete as per direction of Engineer-in-Charge)	sqm	4400	39.00	171600.00
21	Providing and laying in position bitumen hot sealing compound for expansion joints etc. Using grade A ceiling compound	per cm depth per cm width per m length	160	1.65	264.00
22	Providing and laying at or near ground level factory made kerb stone of grade M25 cement concrete 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 be more than 5mm), including making drainage opening wherever required complete etc. all complete as per the direction of Engineer-in-charge. (Length of finished kerb edging shall be measured for payment). (Precast CC kerb stone shall be approved by Engineer-in-charge)	cum	90	5046.80	454212.00
23	Providing and laying non-pressure NP3 class (Heavy 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	RM	10	352.50	3525.00
(b)	250mm dia. RCC pipe	RM	10	470	4700.00
(c)	300mm dia. RCC pipe	RM	20	652.5	13050.00
(d)	450mm dia. RCC pipe	RM	15	950	14250.00

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S.No.	Description of Item	Unit	Quantity	Unit Rate(Rs)	amount
24	Grouting of block outs, pockets, foundations, bolts holes and underside of base plates 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.				
(a)	ConbextraGP-1 or equivalent	cum	2	52538.00	105076.00
(b)	Cement, sand aggregate (of size 6 mm and down) grout 1:1:2 with non-shrink additive and shall be of strength not less than M30	cum	15	12500.00	187500.00
25	Providing & fixing in position precast cement concrete trench covers, coping, roof units, fascia, 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, and of following grade:				
(a)	M30	cum	125	6810.50	851312.50
26	Supplying & fixing (all dia & length) foundation bolts in position with help of proper templates including nuts, washers and template all complete as per drawings & directions of Engr-in-Charge.	kg	27500	86.55	2380125.00
27	Extra over Item above for providing galvanised bolts (Mass of zinc coating = 610gms/sqm), nuts & washer .	kg	27500	6.25	171875.00
28	Fixing (all dia & length) foundation bolts in position with help of proper templates(template to be supplied by contractor) including nuts and washers all complete as per specs, drawings & directions of Engr-in-Charge.(Foundation bolts shall be supplied by BHEL.)	kg	2500	8.13	20325.00
29	Providing & fixing PVC Coated galvanised chainlink fencing including all allied activities, all complete as per Customer Technical specification Vol. VII-A clause no. 6.05.00, drawing and direction of Engineer incharge. (Rates shall be inclusive of all labour material items like PVC Coated GI chainlink fence, fence posts, RCC foundn, HTSSW wire, Concertina coil, brick work, plaster, PCC coping, painting with textured paint, etc.all complete)	RM	800	2885.00	2308000.00
30	Providing & fixing gate made of medium duty MS pipe including all allied activities, all complete as per Customer Technical specification Vol. VII-A clause no. 6.05.00, drawing and direction of Engineer incharge.. (Rates shall be inclusive of all labour material items like medium duty pipe, hinges, MS aldrop, tempered steel pivot, guide track of MS tee, Bronze-Alu. ball bearing arrangement, caster wheel, fabrication, welding, primer, painting etc.all complete) (Earthwork, concrete, reinforcement required for gate post to be paid separately)	kg	600	77.90	46740.00

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S.No.	Description of Item	Unit	Quantity	Unit Rate(Rs)	amount
30	Providing & fixing gate made of medium duty MS pipe including all allied activities, all complete as per Customer Technical specification Vol. VII-A clause no. 6.05.00, drawing and direction of Engineer incharge.. (Rates shall be inclusive of all labour material items like medium duty pipe, hinges, MS aldrop, tempered steel pivot, guide track of MS tee, Bronze-Alu. ball bearing arrangement, caster wheel, fabrication, welding, primer, painting etc.all complete) (Earthwork, concrete, reinforcement required for gate post to be paid separately)	kg	600	77.90	46740.00
31	Providing and laying stone aggregate in switch yard areas in 75mm thick layer using 20 mm aggregates size in layer I and 75mm thick layer using 40mm size aggregate in layer II making overall thickness of stone aggregate as 150mm. Before laying the stone aggregates , the yard surface shall be treated with antiweed treatment all complete as per Customer's specification and direction of Engineer in Charge. (The rate shall be inclusive of all materials ,labour,loading,unloading and surface preparation, compaction, micro grading etc. required for aggregate laying and antiweed treatment)	sqm	45000	174.25	7841250.00
32	Brick pitching 75mm thick in switchyard area including supply of bricks and preparing the surface complete:				
(a)	With Fly Ash bricks of class designation 7.5	sqm	45000	194.14	8736300.00
33	Applying two coat of residual petroleum bitumen of penetration 85/25 grade as per IS:702 of approved quality using 1.7 kg per sqm on concrete surface in contact with soil, after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	sqm	3500	193.30	676550.00
34	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.	kg	17500	59.90	1048250.00
35	Demolishing R.C.C. 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.	cum	10	978.95	9789.50
36	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. In Cement Mortar	cum	10	566.60	5666.00
					61420673.00

NOTE:

- Reinforcement steel shall be supplied by BHEL free of cost for **Item No. 12 (b)** as per norms indicated in conditions of contract. The rate quoted against **Item no.: 12(b)** above shall be deemed to be inclusive of cost against all activities required including transportation of material from SAIL stockyard to site.