

BILL OF QUANTITY (Balance Civil works at Yelahanka)

Name of Project
Name of Work

220 KV SWITCHYARD FOR 1X370 MW YELAHANKA
220KV SWITCHYARD BALANCE CIVIL WORKS

S.No.	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
1	Earthwork in excavation over areas (exceeding 30 cm in depth 1.5m in width as well as 10sqm on plan) including dewatering as necessary of rainwater/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	130	125.95	16373.50
(b)	Ordinary Rock	cum	10	221.05	2210.50
2	Earthwork in surface excavation not exceeding 60 cm in depth but exceeding 1.5 width as well as 10 sqm on plan including disposal of excavated earth up to 50m and lift up to 1.5 m , disposed soil to be levelled and neatly dressed.				
(a)	All kind of soil	sqmm	500	53.00	26500.00
3	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 rainwater/subsoil seepage water, dressing of sides and ramming of bottoms, lift upto 3.5m and 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	850	166.40	141440.00
4	Filling available excavated earth (excluding 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	670	125.75	84252.50
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 1km.	cum	200	98.34	19668.00
(b)	Lead upto 2km.	cum	603	111.50	67234.50
6	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	180	4943.80	889884.00
(b)	M10	cum	40	4415.45	176618.00
(c)	M7.5	cum	10	4148.54	41485.40
7	Centering and shuttering including strutting, propping, etc., and removal of form for:				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	Sqm	420	184.42	77456.40
(b)	Columns, pillars, piers, posts and struts,	Sqm	150	454.41	68161.50
(c)	Walls (any thickness).	Sqm	1950	369.24	720018.00
(d)	Lintels, beams, plinth beams and cantilevers.	Sqm	20	333.23	6664.60
8	Steel reinforcement .				
(a)	Including supply ,straightening, cutting, bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	Kg	4500	53.71	241695.00
(b)	Excluding supply but including unloading, storing, watch & ward ,handling , straightening, cutting, bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	Kg	17000	11.00	187000.00

ANNEXURE-I

S.No.	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
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	220	5887.43	1295234.60
10	Providing and laying design mix cement concrete of M-30 grade, in roads, using cement content as per design mix, using coarse sand and graded stone aggregate in appropriate proportions as per approved & specified design criteria, providing dowel bars with sleeve/ tie bars wherever required, laying at site, spreading and compacting, mechanically by using needle and surface vibrators, levelling to required slope/ camber, finishing with required texture, including steel formwork with sturdy M.S. channel sections, curing, making provision for contraction/ expansion, construction & longitudinal joints by groove cutting machine, providing and filling joints with approved joint filler and sealants, complete all as per direction of Engineer-in-charge (Item of joint fillers, sealants to be paid separately)(Note: Cement content considered in M-30 is @ 340 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately. Refer drawing no: TB-3-379-607-633	cum	300	6328.40	1898520.00
11	Add for using extra cement in the items of design mix over and above the specified cement content therein	quintal	70	533.82	37367.40
12	Extra for providing and mixing water proofing material of approved make in cement concrete work in the proportion recommended by the manufacturer.	kg/50 kg of cement	100	41.73	4173.00
13	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.				
	Grade of concrete shall be M25.	cum	90	6773.82	609643.80
14	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.	kg	8000	60.38	483040.00
15	Structural steelwork welded in built up sections like edge protection angles,insert plates with lugs & framed work including cutting, hoisting, fixing in position/ embedding in concrete and applying a priming coat of approved steel primer all complete. (Material shall be supplied by BHEL free of cost).	kg	21000	20.43	429240.00

ANNEXURE-I

S.No.	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
16	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	RM	50	286.53	14326.50
(b)	150 mm dia. RCC pipe	RM	30	315.32	9459.60
(c)	250 mm dia. RCC pipe	RM	30	429.98	12899.40
17	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	RM	90	962.00	86580.00
18	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.				
(a)	Serrated with central bulb(225mm wide,8-11mm thick)	RM	20	216.54	4330.80
19	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	1150	90.10	103615.00
20	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	cum	1150	10.70	12305.00
21	Providing and fixing in position 25 mm thick bitumen impregnated fibre board conforming to IS: 1838, including the cost of primer, sealing compound in expansion joints.	per cm depth per 100 m length	250	397.12	99280.00
22	Providing and laying in position bitumen hot sealing compound for expansion joints etc. Using grade A sealing compound	per cm depth per cm width per m length	900	2.16	1944.00
23	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). (kerb stone will be fixied over 20 thk cement mortar) .	cum	40	4335.95	173438.00
24	Providing & fixing PVC Coated galvanised chainlink fencing including all allied activities, all complete as per Customer Technical specification , drawing (TB-3-379-607-635) and direction of Engineer incharge. (Rates shall be inclusive of all civil works including labour & material like PVC Coated GI chainlink fence, fence posts, HTSSW wire, Concertina coil, brick work/, plaster, coping, painting with textured paint, etc.all complete)-	RM	400	5221.00	2088400.00

ANNEXURE-I

S.No.	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
25	Providing & fixing gate made of medium duty MS pipe including all allied activities, all complete as per Customer Technical specification , 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	3500	78.07	273245.00
26	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 (Top) making overall thickness of stone aggregate as 150mm . Before laying the stone aggregates , the yard surface shall be treated with antiweed treatment (as per manufacturer recommendations) 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 (earthwork cutting & filling upto ± 200 mm) etc. required for aggregate laying and antiweed treatment)	Sqm	6000	196.51	1179060.00
27	Providing & 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 per coat 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	1400	176.10	246540.00
28	Providing and laying 75mm thk factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	Sqm	582	549.38	319739.16
29	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	1454.55	14545.50
30	Demolishing brick work in Cement Mortar 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.	cum	10	842.75	8427.50
31	Supplying & laying rubble soling of desired thickness with interstics filled with sand, rammed and well compacted to desired thickness all complete as per drawing, specification and direction of Engineer-in-charge (Rate shall be inclusive of material like stone , sand etc., labour, T & P all complete)	cum	240	1032.25	247740.00
32	Providing ,laying & compacting CNS material/locally available moorum for foundations and trenches .	cum	240	781.64	187593.60
TOTAL AMOUNT IN Rs.					12607349.76

ANNEXURE-II

**TRANSMISSION BUSINESS GROUP
(SUB- CONTRACTS MANAGEMENT)
TBG - NOIDA**

PRICE SCHEDULE FORMAT

**SUB: EXECUTION AND HANDING OVER OF BALANCE CIVIL WORKS OF 220KV SWITCHYARD AT
1X370MW CCPP AT YELAHANKA (BENGALURU) IN KARNATAKA**

(a) I/ We hereby agree to execute the above work at ----- % (in figure).....
----- (in words) Above / Below/ At Par the rates of items given in BOQ
(Annexure-I) of subject tender.

NOTE:

1. In this annexure the tenderer shall quote a percentage above/ below/At Par the rates shown in the Bill of Quantities (Annexure-I) of subject tender. The percentage quoted shall be clearly written both in words and figures In case of discrepancy in rates in figure and words, the minimum will be taken into account by BHEL.
2. The quoted percentage will apply to the individual items uniformly.

Date:

Place

Signature of tenderer

Name & Designation of authorized person(s) with seal

ANNEXURE-III

SUMMARY OF PRICES FOR EXECUTION AND HANDING OVER OF BALANCE CIVIL WORKS OF 220KV SWITCHYARD AT 1X370MW CCPP AT YELAHANKA (BENGALURU) IN KARNATAKA

Sl No.	Description	Amount (Rs.)
1	Total amount as per the rates in BOQ for execution and handing over of balance civil works of 220kv switchyard at 1X370MW CCPP at Yelahanka (Bengaluru) in Karnataka (Annexure-I)	126,07,349.76
2	Value of percentage above/below/at par (As indicated in Price Schedule Format, Annexure-II) applicable to the total amount of civil work (Sl. no. 1 above)% above/below/ at par
3	Total amount after consideration of percentage above/below/ at par.	