

<u>BILL OF QUANTITY CUM PRICE SCHEDULE</u>					
Name of Project			: +/- 800kV NE AGRA HVDC PROJECT		
Name of Work			: Civil works for SWITCHYARD FOUNDATIONS, GRAVELLING OF NEW & EXISTING YARD, DC HALL GRADE SLAB, DC HALL RC WALL		
S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
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.	2300	cum	129.35	297505.00
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.	500	cum	130.80	65400.00
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.	1200	cum	83.80	100560.00
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.	1000	cum	82.78	82780.00
(b)	Lead upto 3 km.	300	cum	104.98	31494.00
(c)	Lead upto 5 km.	300	cum	125.92	37776.00
5	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)	15	cum	4514.05	67710.75
(b)	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size)	15	cum	3888.20	58323.00
(c)	1:4:8(1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)	1460	cum	3331.25	4863625.00

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
6	Extra for providing and mixing water proofing material 'Impermo' or equivalent in cement concrete work in the proportion recommended by the manufacturer.	2750	per 50 kg cement	35.35	97212.50
7	Supplying and filling in plinth with Jamuna/local sand under floors including watering, ramming, consolidating and dressing complete.	2800	cum	749.30	2098040.00
8	Supplying chemical emulsion in sealed containers including delivery as specified.				
(a)	Chloropyriphos emulsifiable concentrate of 20%	1500	litre	185.95	278925.00
9	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).	2300	sqm	71.50	164450.00
10	Centering and shuttering as per Customer's specification Clause No. 8.11.13 including strutting, propping, etc., and removal of form at all heights for:				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	900	sqm	166.90	150210.00
(b)	RCC walls at all levels (any thickness).	5900	sqm	285.15	1682385.00
(c)	Columns, Pillars, Piers, Posts and Struts .	525	sqm	365.60	191940.00
11	Steel reinforcement -Cold twisted bars /TMT- Fe 500 (To be procured from SAIL,TISCO, IISCO and RINL only)				
(a)	Including supply and straightening, cutting, bending, binding, (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	5000	kg	62.25	311250.00
(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)	150000	kg	10.50	1575000.00
12	Providing and filling in position blown bitumen in expansion joints.	0.07	cum	52265.00	3658.55
13	Providing and fixing in position 12mm thick bitumen impregnated fibre board conforming to IS 1838 including cost of primer, sealing compound in expansion joints.	40	per cm depth per 100m	430.30	17212.00

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
14	Providing and laying in position machine batched and machine mixed design mix M25 grade cement concrete for reinforced cement concrete work, RC road, 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: 1.) Cement content considered in this item is 330kg/cum. Excess/less cement used as per design mix is payable/recoverable separately 2.) For road vacuum dewatering process with screed board vibrator and finally finished by floating, brooming with wire brush etc. all complete)				
(a)	All works upto plinth level	3560	cum	5242.15	18662054.00
(b)	All works upto above plinth level upto floor V level	380	cum	5781.5	2196970.00
15	Add for using extra cement in the items of design mix over and above the specified cement content therein	2760	quintal	589.80	1627848.00
16	Brickwork with F.P.S.bricks of class designation 75 in foundation and plinth in:				
(a)	Cement mortar 1:6 (1 cement : 6 coarse sand)	375	cum	3316.55	1243706.25
17	Providing & laying at all levels 12mm cement plaster of mix:				
(a)	1:4 (1cement :4 coarse sand)	2000	sqm	132.10	264200.00
18	Providing & laying neat cement punning	2000	sqm	31.10	62200.00
19	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.	5200	kg	66.50	345800.00
20	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 chequered plates for covering of openings, trenches & similar works.	500	kg	67.20	33600.00
(b)	In gratings for transformers, rails and similar works.	12000	kg	77.90	934800.00
21	Cement concrete flooring 1:2:4 (1cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps, etc., complete.				
(a)	50mm thick with 12.5mm nominal size stone aggregate.	10	sqm	280.05	2800.50

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
22	50mm thick CC flooring with " Hardcrete" concrete hardner topping under layer 38mm thick CC M25 and top layer 12 mm thick Hardcrete cement hardner consisting of mix 1:2 (1 cement hardner mix: 2 stone aggregate 6mm nominal size) by volume with which Hardcrete hardening compound of approved quality is mixed @ 2 liter Hardcrete per 50 Kg of cement including cement slurry, but excluding the cost of nosing of steps etc., complete.	17600	sqm	420.50	7400800.00
23	Cement plaster skirting (upto 30cm height) with cement mortar 1:3 (1cement: 3 coarse sand) finished with a floating coat of neat cement.				
(a)	18mm thick	5	sqm	258.20	1291.00
24	Providing & laying at all levels 12mm cement plaster of mix:				
(a)	1:4 (1cement :4 coarse sand)	50	sqm	132.10	6605.00
25	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade				
(a)	Two or more coats over and including priming coat with cement primer.	525	sqm	66.70	35017.50
26	Finishing walls with water proofing cement paint " Snowcem-Plus" of M/s Snowcem India Ltd. or equivalent of required shade :				
(a)	New work : Two or more coat.	2200	sqm	44.95	98890.00
27	Finishing with epoxy paint (2 or more coats) at all locations & levels prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc., complete.				
(a)	On steel work	100	sqm	105.50	10550.00
(b)	On concrete work	17600	sqm	108.55	1910480.00
28	Supplying and laying stone including levelling, site preparation, antiweed treatment in the existing switchyard area as per Customer's specification clause no. 8.3.5 & directions of Engineer in Charge (Rates shall be inclusive of all labour material items like 40mm size stone, antiweeed, levelling, subgrade preparation, PCC shall be (1 cement: 5 fine sand : 10 40mm nominal size brick/stone aggregate) and cement slurry (1:6) etc.).	29524	SQM	385.00	11366740.00
29	Removing of existing stone and staking serviceable material and disposing unserviceable material within 400m leads	10170	SQM	49.10	499347.00
30	Providing and fixing glass strips in joints of terrazo/cement concrete floors, 40mm wide and 4mm thick	9000	RM	29.40	264600.00

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
31	Grouting of block outs, pockets, foundations, bolts holes and underside of base plates with 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 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.	5	cum	17750.00	88750.00
32	Providing & fixing in position precast cement concrete units like trench 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, 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.				
(a)	Grade of concrete shall be M25	25	cum	6747.30	168682.50
33	Providing and fixing GI pipe in cable trench crossing				
(a)	100mm dia.	45	RM	859.00	38655.00
(b)	150mm dia.	45	RM	1359.00	61155.00
34	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	218.35	2183.50
(b)	150mm dia. RCC pipe	10	RM	254.50	2545.00
(c)	250mm dia. RCC pipe	10	RM	342.45	3424.50
(d)	300mm dia. RCC pipe	10	RM	422.90	4229.00
(e)	450mm dia. RCC pipe	10	RM	620.85	6208.50
35	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)	250mm dia. RCC pipe	10	RM	300.00	3000.00
(b)	300mm dia. RCC pipe	10	RM	390.00	3900.00
(c)	450mm dia. RCC pipe	10	RM	575.00	5750.00

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
36	Providing and laying non-pressure NP4 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)	150mm dia. RCC pipe	250	RM	461.00	115250.00
(b)	200mm dia. RCC pipe	15	RM	589.00	8835.00
(c)	250mm dia. RCC pipe	100	RM	701.00	70100.00
(d)	300mm dia. RCC pipe	350	RM	994.00	347900.00
37	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)	Ribbed design with central bulb(225/230mm wide, 5mm thick)	50	meter	384.00	19200.00
(b)	Ribbed design with central bulb(225/230mm wide, 6mm thick)	325	meter	421.00	136825.00
38	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.	1875	sqm	61.25	114843.75
39	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	565	cum	7.75	4378.75
40	Supplying and stacking of graded stone aggregate at site of size range				
(a)	90mm to 45mm	188	cum	1010.75	190021.00
(b)	63mm to 45mm	188	cum	1100.80	206950.40
(c)	53mm to 22.4 mm	188	cum	1190.80	223870.40
41	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)	570	cum	330.15	188185.50

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
42	Supplying and stacking of stone screenings/chippings at site				
(a)	13.2 mm nominal size (Type A)	75	cum	1338.75	100406.25
(b)	11.2 mm nominal size (Type B)	75	cum	1425.85	106938.75
43	Supplying and stacking of moorum at site.	40	cum	624.45	24978.00
44	Supplying and laying stone including antiweed treatment in the switchyard area as per Customer's specification clause no. 8.3.5 & directions of Engineer in Charge (Rates shall be inclusive of all labour material items like 40mm size stone, antiweeed, subgrade preparation, PCC (1:4:8) and cement slurry (1:6) etc.).	6000	sqm	403.00	2418000.00
45	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.	7000	kg	9.75	68250.00
46	Providing & fixing galvanised chainlink fencing including all allied activities, all complete as per Customer's specification clause no. 8.9, drawing and direction of Engineer incharge. (Rates shall be inclusive of all labour material items like galvanised chainlink fence fabric, galvanised tubular post, flats, PCC, painting etc.)	1500	RM	2430.00	3645000.00
	TOTAL(A)				67522172

NOTE:

- 1** Reinforcement steel shall be supplied by BHEL free of cost as per norms indicated in conditions of contract. The rate quoted against Item no.: 11(b) above shall be deemed to be inclusive of cost against all activities required including transportation of material from steel supplier's stockyard to site.