

ANNEXURE-I

BILL OF QUANTITY CUM PRICE SCHEDULE

Name of Project:

765/400/220 KV PGCIL SUB-STATION (NEW) AT BHUJ IN GUJRAT

Name of Work:

CIVIL WORKS FOR 220KV YARD & SPR

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.	8610	cum	131.94	1136003.40
(b)	Ordinary rock	20	cum	201.71	4034.20
(c)	Hard rock (blasting required)	10	cum	354.76	3547.60
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.	2000	cum	133.42	266840.00
(b)	Ordinary rock	16	cum	216.24	3459.84
(c)	Hard rock (blasting required)	10	cum	386.38	3863.80
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.	7625	cum	85.48	651785.00
4	Excavating trenches of required width for pipes, cables, etc. including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 3.0 m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20cm in depth including consolidating each deposited layer by ramming,watering etc.and disposing of surplus excavated soil as directed within a lead of 100m.				
(a)	All kinds of soil				
4.1	Pipes, cables etc, not exceeding 80mm dia.	10	meter	103.43	1034.30
4.2	Pipes, cables etc. exceeding 80mm dia. but not exceeding 300 mm dia.	10	meter	168.91	1689.10
4.3	Pipes, cables etc. exceeding 300mm dia but not exceeding 600mm	10	meter	263.72	2637.20
5	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.	3011	cum	84.44	254248.84
(b)	Lead upto 2 km.	10	cum	95.82	958.20
(c)	Lead upto 3 km.	10	cum	107.08	1070.80
(d)	Lead upto 5 km.	10	cum	128.44	1284.40
6	Supplying, filling and compacting CNS materials as per IS: 9451 at the site under floors, foundations, roads, cable trenches, drains, etc. including royalty, carriage 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.	284	Cum	265.91	75518.44
7	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)	5	cum	4604.33	23021.65
(b)	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size)	5	cum	3965.96	19829.80
(c)	1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)	61	cum	3665.17	223575.37
8	Providing and laying in position machine batched, machine mixed and machine vibrated design mix M25 grade cement concrete for reinforced cement concrete work, using cement as per approved design mix, including plumbing 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, retrard 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 330kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately).				
(a)	All works upto plinth level	1400	cum	5346.99	7485786.00
(b)	All works above plinth level upto floor V level	36	cum	5897.13	212296.68

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9	Providing and laying reinforced CC road/ pavement of design mix M-25 grade with readymixed concrete from batching plant. The readymixed concrete shall be laid and finished with screed board vibrator, vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per customer's technical specifications and directions of Engineer-in-charge excluding the cost of panel shuttering and reinforcement steel but including the cost of admixtures in recommended proportions (as per IS 9103) to accelerate, retard setting of concrete, improve workability without impairing strength and durability. (Note:- cement content considered in this item is 330kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately).	250	Cum	6188.44	1547110.00
10	Add for using extra cement in the items of design mix over and above the specified cement content therein.	50	MT	5179.43	259903.80
11	Providing & fixing 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, 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	75	Cum	6027.49	452061.75
12	Extra for providing and mixing water proofing material 'Impermo' or equivalent in cement concrete work in the proportion recommended by the manufacturer.	110	1kg per 50 kg cement	36.06	3966.60
13	Centering and shuttering including strutting, propping, etc., and removal of form for:				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	2460	sqm	170.24	418790.40
(b)	RCC walls at all levels (any thickness).	4510	sqm	290.85	1311733.50
(c)	Suspended floors, roofs, landings, balconies, chajjas and access platforms at all levels.	140	sqm	317.42	44438.80
(d)	Lintels, beams, plinth beams and cantilevers.	150	sqm	267.50	40125.00
(e)	Columns, Pillars, Piers, Posts and Struts.	2770	sqm	372.91	1032960.70
14	Steel reinforcement -Cold twisted bars /TMT- Fe 500 (To be procured from SAIL, TISCO, IISCO and RINL only)				
(a)	Excluding supply but including straightening, cutting, bending, binding, (i/c cost of binding wire), placing in position, etc., all labour & material, complete. (Reinforcement steel shall be issued by BHEL free of cost. Unloading, storage and watch & ward is in the scope of the contractor).	129000	kg	6.03	777870.00
(b)	Including supply, straightening, cutting, bending, binding, (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	5000	kg	63.50	317500.00
15	Brickwork with F.P.S.bricks of class designation 75 in foundation and plinth in:				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	4500	cum	3382.88	15222960.00
16	Brickwork with F.P.S.bricks of class designation 75 in superstructure above plinth level to floor V level in all shapes and sizes in:				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	110	cum	3953.67	434903.70
17	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.	58985	kg	61.10	3603983.50
18	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 covering of floors/trenches of control room building with chequered plates, stringers, treads, landings, etc., of staircases involving use of chequered plates, wherever required, all complete.	100	kg	68.54	6854.00
(b)	In gratings, frames, ladders, stair railings (including pipes), rails, ISMB, ISMC and similar works.	25260	kg	79.46	2007159.60
19	Providing and laying Non Pressure NP-3 (Medium duty) R.C.C. hume pipe including collars/spigot jointed with stiff mixture of cement mortar of mix 1:2 (1 cement : 2 fine sand) including testing of joints etc all complete as per drawing and specification excluding the cost of concrete, shuttering, reinforcement, brickwork, plaster on brickwork and painting.				
a)	100mm dia	35	RM	357.66	12518.10
b)	250mm dia	20	RM	526.25	10525.00
c)	300mm dia	30	RM	568.62	17058.60
d)	450mm dia	30	RM	1012.56	30376.80

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S. No.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
20	Providing and fixing in position in culvert/road crossing/building PVC pipes conforming to IS : 12818 including jointing with seal all complete as per drawing and specification.				
	150mm diameter	45	RM	133.47	6006.15
21	Supplying and erection of dewatering pumps at desired location including all cable and pipe connections alongwith auto starter and necessary shed all complete as per customer's specification and instruction of engineer in charge.				
(a)	5 HP	1	Nos	22955.64	22955.64
(b)	0.5 HP	2	Nos	9297.03	18594.06
22	Supplying & fixing (all dia & length) foundation bolts in position with help of proper templates (template to be supplied by contractor) including nuts, washers and template all complete as per drawings & directions of Engr-in-Charge. Weight of the template shall not be measured for payment purpose.	25	Kg	88.28	2207.00
23	Extra over Item above for providing galvanised bolts (Mass of zinc coating = 610gms/sqm), nuts & washer.	25	kg	5.90	147.50
24	Fixing (all dia & length) foundation bolts in position with help of proper templates including nuts, washers and template (template to be supplied by contractor) all complete as per drawings & directions of Engr-in-Charge. Weight of the template shall not be measured for payment purpose.	15745	Kg	7.39	116355.55
25	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 32.5 cm 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 50 metres.	3550	sqm	62.48	221804.00
26	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	3550	sqm	7.91	28080.50
27	Suppling and stacking at site				
(a)	90 mm to 45 mm size stone aggregate	370	cum	1030.97	381458.90
(b)	63 mm to 45 mm size stone aggregate	280	cum	1122.82	314389.60
(c)	53 mm to 22.5 mm size stone aggregate	280	cum	1214.62	340093.60
(d)	Stone screening 13.2 mm nominal size (type A)	120	cum	1365.53	163863.60
(e)	Stone screening 11.2 mm nominal size (type B)	50	cum	1454.37	72718.50
(f)	Moorum	80	cum	636.94	50955.20
28	Laying, spreading and compacting stone aggregates of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3-wheeled road / vibratory roller 8-10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening/ binding materials to fill up interstices of coarse aggregate, watering and compacting to the required density etc., all complete. (Payment will be made for compacted layers only. Stone aggregates, screenings & moorum to be paid separately.).				
(a)	Subbase with stone aggregate 90mm to 45mm including stone screening 13.2mm size and moorum/blinding material.	280	cum	336.75	94290.00
(b)	Base course with stone aggregate 63mm to 45mm including stone screening 13.2mm size and moorum/blinding material.	280	cum	336.75	94290.00
(c)	Base course with stone aggregate 53mm to 22.4 mm including stone screening 11.2mm size and moorum/blinding material.	280	cum	336.75	94290.00
29	Providing and laying 75mm thick PCC 1:4:8 (1 cement : 4 coarse sand : 8) graded stone aggregate 40mm nominal size) shoulder over well compacted earth on both sides of the road including smooth finished top surface all complete as per drawing, customer's Technical Specifications and directions of Engineer-in-charge. (Rate shall be inclusive of all labours, materials, well compacted earth, T&P, etc.)	850	Sqm	285.55	242717.50
30	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.	320	per cm depth per 100 m	438.91	140451.20
31	Providing and laying polythene sheet of 125 microns between the PCC and RCC slab in road/ pavement works all complete as per direction of Engineer-in-Charge)	3300	sqm	9.68	31944.00
32	Providing and fixing in position pre moulded joint filler in expansion joints	50	per cm depth per cm width per m length	2.45	122.50
33	Providing and laying in position bitumen hot sealing compound for expansion joints etc.				
	Using grade A ceiling compound	50	per cm depth per cm width per m length	1.68	84.00

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34	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)	135	RM	468.33	63224.55
35	Supplying and filling in plinth with Jamuna/local sand under floors including watering, ramming, consolidating and dressing complete.	3	cum	764.29	2292.87
36	Supplying chemical emulsion in sealed containers including delivery as specified.				
	Chloropyriphos emulsifiable concentrate of 20%	20	litre	189.67	3793.40
37	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).	50	sqm	90.02	4501.00
38	Providing and laying damp proof course with 50mm thick cement concrete 1:1.5:3 (1 Cement:1.5 coarse sand : 3 graded stone aggregate 12.5 mm nominal size) .	20	sqm	259.79	5195.80
39	Applying a coat of residual petroleum bitumen of penetration 80/100 of approved quality using 1.7 kg per sqm on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	20	sqm	98.58	1971.60
40	12mm cement plaster on even side of the walls in the mix: 1:6 (1cement :6 fine sand)	7400	sqm	114.75	849150.00
41	15mm cement plaster on rough side of the walls in the mix: 1:6 (1cement :6 fine sand)	3500	sqm	132.80	464800.00
42	12mm cement plaster on the wall/ concrete surface in the mix: 1:6 (1cement :6 coarse sand)	50	Sqm	123.47	6173.50
43	12mm cement plaster finished with a floating coat of neat cement in the mix: 1:4 (1cement :4 fine sand)	7400	Sqm	156.52	1158248.00
44	6mm cement plaster to ceiling of mix 1:3 (1 cement : 3 fine sand)	120	sqm	103.02	12362.40
45	18mm cement plaster on external face of walls in two coats with under layer 12mm thick cement plaster 1:5 (1 cement :5 coarse sand) finished with a top layer of 6mm thick 1:6 cement plaster (1cement : 6 fine sand)	180	sqm	186.56	33580.80
46	Providing an fixing chicken wire mesh on wall, floor & ceiling surface all complete as per drawing/specification and direction of Engineer-in charge.	500	sqm	33.38	16690.00
47	Applying priming coat (a) With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works. (b) With water thinable cement primer of approved brand and manufacture on plastered wall/ concrete surfaces.	850 480	sqm sqm	21.11 28.10	17943.50 13488.00
48	Painting with approved required shade a) Finishing walls with water proofing cement paint - new work (02 or more coats applied @3.84kg/10sqm) b) Painting with synthetic enamel paint of approved brand and manufacture to give an even shade (02 or more coats on new work). c) Painting with black anti-corrosive bitumastic paint of approved brand and manufacture to give an even shade (02 or more coats on new work). d) Painting of all steel works used for grating and supports in transformer/ reactor foundations with epoxy based zinc phosphate primer (two packs) conforming to IS: 13238- 1991 as per manufacturer's specifications including preparation of surface..	480 570 250 1680	Sqm Sqm Sqm Sqm	45.85 54.93 45.44 107.61	22008.00 31310.10 11360.00 180784.80
49	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade New work (two or more coats) over and including priming coat with cement primer.(Work to be carried as per relevant IS codes.)	120	sqm	68.03	8163.60
50	Distempering with first quality acrylic washable distemper (ready mixed) of approved manufacturer and of required shade and colour complete as per manufacturer's specification				

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	New work (two or more coats)	50	sqm	38.10	1905.00
51	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacture, over the plaster wall surface to prepare the surface even and smooth complete.	50	sqm	77.57	3878.50
52	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams per litre of approved brand and manufacturer, including applying additional coats whenever required to achieve even shade and colour.				
	New work : (Two or more coat).	120	sqm	62.68	7521.60
53	Finishing walls with Premium Acrylic Smooth exterior flat paint with Silicone additives of required shade over an under coat of suitable primer on new cement plaster surface:				
	New work : (Two or more coat).	250	sqm	82.06	20515.00
54	Making plinth protection of 50mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) laid over 75mm thick bed of dry brick balast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth.	50	sqm	345.53	17276.50
55	Providing and fixing 1st quality ceramic glazed tiles conforming to IS:15622 (thickness to be specified by manufacture) of approved make in all colours (shades as approved by Engineer-in-Charge) in skirting, risers of steps and dados upto ceiling on wall over 12 mm thick bed of Cement mortar 1:3 (1 Cement:3 coarse sand) and jointing with grey cement slurry @3.3 kg/sqm including pointing in white cement mixed with pigment of matching shade complete.	160	sqm	738.74	118198.40
56	Providing and laying 1st quality ceramic glazed floor tiles 300X300 mm (thickness to be specified by manufacturer) conforming to IS:15622 of approved make in colours as approved by Engineer in Charge laid on 20mm mm thick bed of cement mortar 1:4 (1 cement : 4 coarse sand) including pointing the joints with white cement mixed with pigment of matching shade complete.	10	sqm	779.84	7798.40
57	Providing and laying polished vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and conforming to IS: 15622 of approved make in all colours and shades laid over 20mm thick cement mortar 1:4 (1 Cement:4 coarse sand) including grouting the joints with white cement and matching pigments etc. complete as per direction of Engineer-in charge.				
	Size of tile 60 x 60 cm	30	sqm	1363.84	40915.20
58	Providing and fixing approved quality polished vitrified tiles (thickness to be specified by the manufacturer) of approved make and colours in skirting,risers of steps and dados over 12 mm thick bed of Cement mortar 1:3 (1 Cement:3 coarse sand) and jointing with grey cement slurry @3.3 kg/sqm including pointing in white cement mixed with pigment of matching shade complete.				
	Size of tile 60 x 60 cm	10	sqm	1365.98	13659.80
59	Providing and laying pressed clay tile (Mangalore tile), as per approved pattern, of 20mm nominal thickness of approved size on roofs jointed with cement mortar 1:4 (1 cement : 4 coarse sand) mixed with 2% integral water proofing compound, laid over a bed of 20mm thick cement mortar 1:4 (1 cement: 4 coarse sand) and finished neat, all complete as per direction of Engineer-in-Charge.	120	sqm	440.54	52864.80
60	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded builtup standard tubular and other sections of approved make conforming to IS: 733 and IS:1285, fixed with rawl plugs and screws or with fixing clips or with expansion hold fasteners including necessary filling up of gaps at junctions at top , bottom and sides with required PVC/neoprene felt, etc. Aluminium sections shall be smooth , rust free, straight, mitred and jointed mechanically wherever required including cleat angle, aluminium snap beading for glazing/panelling, CP brass/stainless steel screws, all complete as per architectural drawings and direction of Engineer-in-charge. (Glazing and panelling to be paid for separately).				
(a)	For fixed portion				
	Powder coated aluminium (minimum thickness of podwer caoting 50 micron)	100	kg	395.35	39535.00
(b)	For shutters of doors, windows & ventilators including providing and fixing hinges/pivots and fittings wherever required including the cost of PVC/neoprene gasket required .				
	Powder coated aluminium (minimum thickness of podwer caoting 50 micron)	20	kg	445.08	8901.60

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61	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions, etc., with PVC/neoprene gasket, etc., complete as per the architectural drawings and directions of Engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item).			0.00	
	With float glass panes of 5.5mm thickness (weight not less than 13.75kg/sqm)	15	sqm	923.87	13858.05
62	Providing and fixing chromium plated brass 100mm mortice latch and lock with 6 levers and a pair of lever handles with necessary screws etc. complete (best make of approved quality).	6	each	659.43	3956.58
63	Providing and fixing aluminium sliding door bolts anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with nuts and screws etc., complete.				
	300 X 16mm	12	each	207.88	2494.56
64	Providing and fixing aluminium tower bolts anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with necessary screws etc., complete.				
	300 X 10mm	6	each	102.41	614.46
	150 X 10mm	6	each	60.18	361.08
65	Providing and fixing aluminium handles anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with necessary screws etc., complete.				
	125mm	6	each	63.75	382.50
66	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS 6315 marked "hardwyn" make (Model 3000) or equivalent for doors including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece M. S. sheet outer box with slide plate etc. complete as per direction of Engineer-in-charge.				
	With Stainless steel cover plate	6	each	1992.16	11952.96
67	Dismantling of RCC Works including necessary excavation, stacking of steel bars and disposal of unservicable material within the substation boundary (upto a lead of 1km) as per direction of site-in-charge.	5	cum	1097.42	5487.10
68	Demolishing / Dismantling of Cement Concrete manually / by mechanical means including necessary excavation and disposal of unservicable material within the substation boundary as per direction of site-in-charge.				
(a)	Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)	2	cum	684.47	1368.94
(b)	Nominal concrete 1:4:8 or leaner mix (i/c equivalent design mix)	2	cum	421.92	843.84
69	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.	10	cum	10186.56	101865.60
70	Supplying and filling stone aggregate (40mm to 60mm size) over grating for transformer/reactor foundation as per specification.	46	cum	642.02	29532.92
71	Antiweed treatment in switchyard area including micro leveling, dressing, compaction, effectiveness test of antiweed chemical, etc all complete as per Technical Specification and instruction of Engineer-in-charge including cost of all labour, materials, T&P, etc.	50000	Sqm	12.76	638000.00
72	Providing & laying in position plain cement concrete (PCC) of 1:5:10 (1 cement : 5 coarse sand : 10 brick aggregate 40mm nominal size) with a layer of cement slurry of mix 1:6 (1 cement : 6 Fine Sand) over PCC layer as per Technical Specification, Drawings and instruction of Engineer-in-charge including cost of all labour, materials, T&P, etc. Note:- the contractor shall have option to use graded stone aggregate 40mm nominal size in place of brick aggregate without any extra cost to BHEL.	3875	cum	2026.96	7854470.00
73	Supplying and spreading stone aggregates of 40mm nominal size (ungraded single size) in switchyard over yard PCC as per drawing and specification all complete including cost of all labour, materials, T&P, etc. but excluding the cost of PCC. Final compacted thickness of the stone aggregate layer shall be 100mm uniformly.	30000	Sqm	76.20	2286000.00

TOTAL (Rs)

54554304

ANNEXURE-II

BILL OF QUANTITIES FOR UNDER GROUND EARTHING AND ELECTRODES REV.00					
Name of Project		765/400/220kV substation Bhuj (New) in Bhuj			
Name of Work		Bill of Quantity for Under Ground Earthing and Electrodes for 220kV Yard			
S.No	Description	Unit	Qty.	Rate	Amount
	MAIN EQUIPMENT				
1	Unloading, storing and laying of 40 mm dia MS Rod at a minimum depth of 600 mm measured from the top of Finished Ground Level and bringing out risers just below gravel level near the equipment foundations as per requirement including following works: - excavation - laying of MS rod - welding of rods (refer Drg No. C/ENG/STD/EARTHINGS/09 SHEET # 1, Sheet # 2 , SHEET # 3 for Welding details of rods) - backfilling of soil and compaction for bringing out pig tail risers of 40 dia MS rod for equipments. Risers shall be raised from the earthmat (at 600 mm depth) to approx 150 mm below finished ground level to the nearest point of the equipment. This shall include all cutting, bending, welding, fixing, application of paints on cutting & welding surface, etc to the main earthmesh. - any other work necessary to complete the laying of earthmat (40 mm dia MS rod will be supplied by BHEL).	MT	60	5,785.20	3,47,112.00
2	Fabrication & laying of Auxiliary Mat of 40 mm Dia MS Rods at a depth of 300 mm from top of FGL including excavation & backfilling as per Drg No. C/ENG/STD/EARTHINGS/09 SHEET # 4 - any other work necessary to complete the laying of earthmat. - welding of rods (refer Drg No. C/ENG/STD/EARTHINGS/09 SHEET # 1, Sheet # 2 , SHEET # 3 for Welding details of rods. (40 Diameter MS rod will be supplied by BHEL)	Nos.	126	2,067.00	2,60,442.00
3	Installation of Pipe Electrode(to be driven - 3.0 Mtr) as per Drg. No. C/ENG/STD/EARTHINGS/09 SHEET # 5 including following works: - excavation - installing the pipe electrode. - pipe electrodes in treated earth pit (as per IS) such as alternate layers of coke/ charcoal and salt or bentonite clay. - Backfilling and compaction - Cement Concrete pit with a ISI marked cast iron cover hinged to a cast iron frame to have an access to the joints. - any other work necessary to complete the work Remark :- Pipe Electrode assembly i.e. GI Pipe, Nuts, Bolts & Washers and funnel with wire mesh will be supplied by BHEL.	nos.	4	7,860.16	31,440.64
4	Installing of 40 mm diameter Rod Electrode with test pit as per Drg. No. Drg. No. C/ENG/STD/EARTHINGS/09 SHEET # 6 including following works: - excavation - installing the rod electrode - backfilling and compaction - Cement Concrete pit with a ISI marked cast iron cover hinged to a cast iron frame to have an access to the joints. - any other work necessary to complete the work Remark:- 40 mm dia MS rod, GI Flat, Nut Bolt washers will be supplied by BHEL.	Nos.	30	3,492.40	1,04,772.00
5	Installing of 40 mm diameter Rod Electrode without test pit including following works: - excavation/hammering of rod in earth - installing the rode electrode - backfilling and compaction - any other work necessary to complete the work (40 mm dia MS rod will be supplied by BHEL).	Nos.	2	3,249.72	6,499.43
	Total Rs.				7,50,266
	Enclosed: Drawing C/ENG/STD/EARTHINGS/09 SHEET # 1 to SHEET # 6				

ANNEXURE-III

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

PRICE SCHEDULE FORMAT

**SUB: EXECUTION AND HANDING OVER OF CIVIL WORKS OF 220KV YARD OF 765/400/220KV
SUB-STATION BHUJ (NEW) AT BHUJ IN GUJARAT**

(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
for civil works (Annexure-I & II) of subject tender.

NOTE:

1. In this annexure the tenderer shall quote a percentage above or below the rates shown in the Bill of Quantities of civil works (Annexure-I & II). 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-IV

SUMMARY OF PRICES FOR EXECUTION AND HANDING OVER OF CIVIL WORKS OF 220KV YARD OF 765/400/220KV SUB-STATION BHUJ (NEW) AT BHUJ IN GUJARAT

Sl No.	Description	Amount (Rs.)
1 (a)	Total amount as per the rates in BOQ for execution and handing over of civil works of 220kV yard of 765/400/220kV sub-station Bhuj (New) at Bhuj in Gujarat (Annexure-I)	545,54,304.00
1 (b)	Total amount as per the rates in BOQ for under ground earthing and electrodes work of 220kV yard of 765/400/220kV sub-station Bhuj (New) at Bhuj in Gujarat (Annexure-II)	7,50,266.00
1	Total Amount for civil works (Annexure- I & II)	553,04,570.00
2	Value of percentage above/below/at par (As indicated in Price Schedule Format, Annexure-III) applicable to the total amount of civil work (Sl. no. 1 above)% above/below
3	Total amount for civil work after consideration of percentage above/below/ at par.	