

BILL OF QUANTITY CUM PRICE SCHEDULE

Name of Project:

765/400/220 KV PGCIL SS EXTN AT
BANASKANTHA IN GUJRAT

Name of Work:

CIVIL WORKS FOR 765KV 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.	20000	cum	129.35	2587000.00
(b)	Ordinary rock	200	cum	197.75	39550.00
(c)	Hard rock (blasting required)	50	cum	347.80	17390.00
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.	7250	cum	130.80	948300.00
(b)	Ordinary rock	100	cum	212.00	21200.00
(c)	Hard rock (blasting required)	40	cum	378.80	15152.00
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.	19350	cum	83.80	1621530.00
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	101.40	1014.00
4.2	Pipes, cables etc. exceeding 80mm dia. but not exceeding 300 mm dia.	10	meter	165.60	1656.00
4.3	Pipes, cables etc. exceeding 300mm dia but not exceeding 600mm	10	meter	258.55	2585.50
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.	8250	cum	82.78	682935.00
(b)	Lead upto 2 km.	20	cum	93.94	1878.80
(c)	Lead upto 3 km.	10	cum	104.98	1049.80
(d)	Lead upto 5 km.	10	cum	125.92	1259.20
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.	3440	Cum	260.70	896808.00
7	Supplying, filling and compacting stone boulders mixed with sand at the site under floors, foundations, roads, cable trenches, drains, etc. in layers not exceeding 250mm thickness 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.	500	Cum	1340.00	670000.00
8	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)	18	cum	4514.05	81252.90
(b)	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size)	3	cum	3888.20	11664.60
(c)	1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)	860	cum	3593.30	3090238.00

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9	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	6700	cum	5242.15	35122405.00
(b)	All works above plinth level upto floor V level	220	cum	5781.50	1271930.00
10	Add for using extra cement in the items of design mix over and above the specified cement content therein.	208	MT	5077.87	1056196.96
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	30	Cum	6002.50	180075.00
12	Extra for providing and mixing water proofing material 'Impermo' or equivalent in cement concrete work in the proportion recommended by the manufacturer.	50	per 50 kg cement	35.35	1767.50
13	Centering and shuttering including strutting, propping, etc., and removal of form for:				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	2500	sqm	166.90	417250.00
(b)	RCC walls at all levels (any thickness).	2500	sqm	285.15	712875.00
(c)	Suspended floors, roofs, landings, balconies, chajjas and access platforms at all levels.	120	sqm	311.20	37344.00
(d)	Lintels, beams, plinth beams and cantilevers.	100	sqm	262.25	26225.00
(e)	Columns, Pillars, Piers, Posts and Struts .	4200	sqm	365.60	1535520.00
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).	685000	kg	9.34	6395528.85
(b)	Including supply, straightening, cutting, bending, binding, (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	5000	kg	62.25	311250.00
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)	20	cum	3316.55	66331.00
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)	50	cum	3876.15	193807.50
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.	49500	kg	59.90	2965050.00
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.	200	kg	67.20	13440.00

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(b)	In gratings, frames, ladders, stair railings (including pipes), rails, ISMB, ISMC and similar works.	300	kg	77.90	23370.00
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	5	RM	554.42	2772.12
b)	250mm dia	12	RM	815.77	9789.23
c)	300mm dia	18	RM	881.44	15865.96
d)	450mm dia	18	RM	1569.62	28253.08
e)	600mm dia	24	RM	2047.02	49128.46
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	40	RM	206.90	8276.00
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	35584.62	35584.62
(b)	0.5 HP	1	Nos	14411.77	14411.77
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	86.55	2163.75
23	Extra over Item above for providing galvanised bolts (Mass of zinc coating = 610gms/sqm), nuts & washer.	25	kg	9.15	228.75
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.	68500	Kg	11.45	784325.00
25	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)	35	RM	459.15	16070.25
26	Supplying and filling in plinth with Jamuna/local sand under floors including watering, ramming, consolidating and dressing complete.	3	cum	749.30	2247.90
27	Supplying chemical emulsion in sealed containers including delivery as specified.				
	Chloropyriphos emulsifiable concentrate of 20%	10	litre	185.95	1859.50
28	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).	120	sqm	88.25	10590.00
29	Providing and laying damp proof course 50mm thick cement concrete 1:1.5:3 (1 Cement:1.5 coarse sand : 3 graded stone aggregate 12.5 mm nominal size) .	15	sqm	254.70	3820.50

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30	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.	15	sqm	96.65	1449.75
31	12mm cement plaster on even side of the walls in the mix: 1:6 (1cement :6 fine sand)	150	sqm	112.50	16875.00
32	15mm cement plaster on rough side of the walls in the mix: 1:6 (1cement :6 fine sand)	20	sqm	130.20	2604.00
33	12mm cement plaster on the wall/ concrete surface in the mix: 1:6 (1cement :6 coarse sand)	50	Sqm	121.05	6052.50
34	12mm cement plaster finished with a floating coat of neat cement in the mix: 1:4 (1cement :4 fine sand)	50	Sqm	153.45	7672.50
35	6mm cement plaster to ceiling of mix 1:3 (1 cement : 3 fine sand)	120	sqm	101.00	12120.00
36	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)	170	sqm	182.90	31093.00
37	Providing an fixing chicken wire mesh on wall, floor & ceiling surface all complete as per drawing/specification and direction of Engineer-in charge.	450	sqm	51.75	23287.50
38	Applying priming coat				
(a)	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works.	260	sqm	20.70	5382.00
(b)	With water thinable cement primer of approved brand and manufacture on plastered wall/ concrete surfaces.	100	sqm	27.55	2755.00
39	Painting with approved required shade				
a)	Finishing walls with water proofing cement paint - new work (02 or more coats applied @3.84kg/10sqm)	50	Sqm	44.95	2247.50
b)	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade (02 or more coats on new work).	220	Sqm	53.85	11847.00
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).	50	Sqm	44.55	2227.50
40	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.)	60	sqm	66.70	4002.00
41	Distempering with first quality acrylic washable distemper (ready mixed) of approved manufacturer and of required shade and colour complete as per manufacturer's specification New work (two or more coats)	50	sqm	37.35	1867.50
42	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	76.05	3802.50
43	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).	50	sqm	61.45	3072.50
44	Finishing walls with Premium Acrylic Smooth exterior flat paint with Silicone additives of required shade over an under caot of suitable primer on new cement plaster surface: New work : (Two or more coat).	165	sqm	80.45	13274.25

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S.No.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
45	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.	40.00	sqm	338.75	13550.00
46	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.	150	sqm	724.25	108637.50
47	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	764.55	7645.50
48	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	25	sqm	1337.10	33427.50
49	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	1339.20	13392.00
50	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	431.90	51828.00
51	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 powder coating 50 micron)	75	kg	387.60	29070.00
(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 powder coating 50 micron)	15	kg	436.35	6545.25
52	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).				

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	With float glass panes of 5.5mm thickness (weight not less than 13.75kg/sqm)	10	sqm	905.75	9057.50
53	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).	4	each	646.50	2586.00
54	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	8	each	203.80	1630.40
55	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	4	each	100.40	401.60
	150 X 10mm	4	each	59.00	236.00
55	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	4	each	62.50	250.00
56	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	4	each	1953.10	7812.40
57	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.	20	cum	15790.67	315813.46
58	Providing & laying in position plain cement concrete (PCC) of 1:5:10 (1 cement : 5 coarse sand : 10 brick aggregate) with a layer of cement slurry of mix 1:6 (1 cement : 6 Fine Sand) over PCC layer as per Technical Specification.	3100	cum	3084.70	9562570.00
59	Antiweed treatment in switchyard area including micro leveling, dressing etc as per Technical Specification.	40000	Sqm	19.42	776923.08
60	Supplying and spreading stone in switchyard as per drawing and specification all complete over PCC excluding the cost of PCC.	40000	Sqm	115.96	4638461.54
61	Demolishing / Dismantling of RCC Works manually / by mechanical means including necessary excavation, cutting & stacking of steel bars and disposal of unservicable material within the substation boundary as per direction of site-in-charge.	2	cum	978.95	1957.90
62	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	671.05	1342.10
(b)	Nominal concrete 1:2:8 or leaner mix (i/c equivalent design mix)	2	cum	413.65	827.30

TOTAL**77743814**