

**BILL OF QUANTITY CUM PRICE SCHEDULE**

**Name of Project** : 66KV Substation Extn. at Kribhco Hazira  
**Name of Work** : Civil Work of Switchyard & ABT Room

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.	650	cum	129.35	84077.50
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.	1100	cum	130.80	143880.00
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.	650	cum	83.80	54470.00
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.	1050	cum	82.78	86919.00
(b)	Lead upto 3 km.	50	cum	104.98	5249.00
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.				
(a)	1:4:8(1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)	135	cum	3593.30	485095.50
6	Providing and laying cement concrete in screed at terrace for water proofing treatment upto floor five level excluding the cost of centring, shuttering and finishing:				
	1:2:4 (1 cement : 2 coarse sand : 4 downgraded stone aggregate 12.5mm nominal size)	1	cum	4514.05	4514.05

7	Extra for providing and mixing water proofing material 'Impermo' or equivalent in cement concrete work in the proportion recommended by the manufacturer.	100	kg	35.35	3535.00
8	Supplying and filling in plinth with Jamuna/local sand under floors including watering, ramming, consolidating and dressing complete.	10	cum	749.30	7493.00
9	Providing and laying well compacted under-bed dry rubble soling of compacted thickness 300 mm with interstices properly filled with grits all complete (Rates shall include of labour, materials like rubble soiling with grits etc.)	30	sqm	446.10	13383.00
10	Supplying chemical emulsion in sealed containers including delivery as specified.				
	Chloropyriphos emulsifiable concentrate of 20%	5	litre	185.95	929.75
11	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).	30	sqm	75.00	2250.00
12	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) .	6	sqm	254.70	1528.20
13	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.	6	sqm	96.65	579.90
14	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for RCC structural elements including roads 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. - <b>M20 grade</b> reinforced cement concrete by using minimum 350kg of cement per cum of concrete.				
(a)	All works upto floor V level.	29	cum	5360.11	155443.19

<b>15</b>	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for RCC structural elements including roads 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. - <b>M25 grade</b> reinforced cement concrete by using minimum 410kg of cement per cum of concrete.				
<b>(a)</b>	All works upto floor V level.	415	cum	5716.99	2372550.85
<b>16</b>	Add or deduct for providing richer or leaner mixes respectively at all floor levels				
<b>(a)</b>	Providing M-30 grade concrete by using minimum 420kg of cement per cun of concrete instead of M-25 grade B.M.C./R.M.C.	415	cum	63.20	26228.00
<b>17</b>	Centering and shuttering including strutting, propping, etc., and removal of form for:				
<b>(a)</b>	Foundations, footings, bases of columns, etc., for mass concrete.	204	sqm	166.90	34047.60
<b>(b)</b>	RCC walls at all levels (any thickness).	3680	sqm	285.15	1049352.00
<b>(c)</b>	Suspended floors, roofs, landings, balconies, chajjas and access platforms at all levels.	30	sqm	311.20	9336.00
<b>(d)</b>	Lintels, beams, plinth beams and cantilevers.	50	sqm	262.25	13112.50
<b>(e)</b>	Columns, Pillars, Piers, Posts and Struts .	350	sqm	365.60	127960.00
<b>(f)</b>	Stairs	10	sqm	326.30	3263.00
<b>18</b>	Extra for additional height in centring ,shuttering wherever required with adequate bracing ,propping etc. including cost of deshuttering and decentring at all levels over a height of 3.5 meter for every additional height of 1 meter or part thereof (Plan area to be measured).				
	Suspended floors, roofs, landing, beams and balconies .	30	sqm	121.65	3649.50
<b>19</b>	Steel reinforcement -Cold twisted bars /TMT- Fe 500 (To be procured from SAIL, TISCO and RINL only)				
<b>(a)</b>	Including supply and straightening, cutting, bending, binding, (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	43000	kg	62.25	2676750.00
<b>20</b>	Brickwork with F.P.S.bricks of class designation 75 in foundation and plinth in:				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	5	cum	3316.55	16582.75
<b>21</b>	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)	20	cum	3876.15	77523.00

<b>22</b>	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	2	each	203.80	407.60
<b>23</b>	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	100.40	602.40
<b>24</b>	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	62.50	375.00
<b>25</b>	Providing and fixing IS:3564 marked aluminium die cast body tubular type universal door closer of approved quality and make with accessories and screws complete.	1	each	662.80	662.80
<b>26</b>	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.	13000	kg	59.90	778700.00
<b>27</b>	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.				
<b>(a)</b>	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	67.20	6720.00
<b>(b)</b>	In gratings, frames, ladders, stair railings, gates (including pipes), rails, ISMB, ISMC and similar works.	100	kg	77.90	7790.00
<b>28</b>	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.				
	40mm thick with 20mm nominal size stone aggregate.	24	sqm	280.05	6721.20

29	52mm 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.	24	sqm	420.50	10092.00
30	Cement plaster skirting (upto 30cm height) with cement mortar 1:3 (1cement: 3 coarse sand) finished with a floating coat of neat cement.				
	18mm thick	6	sqm	258.20	1549.20
31	Providing and laying of 10 mm minimum thick pre-polished vitrified tiles 600X600 mm of approved make and colours laid over 40 mm thick bed of Cement mortar 1:4 (1 Cement:4 coarse sand) including pointing in white cement mixed with pigment of matching shade complete as per direction of Engineer-in charge.	24	sqm	1337.10	32090.40
32	Providing and fixing approved quality pre polished vitrified tiles minimum thickness 10 mm 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.	5	sqm	1339.20	6696.00
33	Making khurras 45X45cm with average minimum thickness of 5cm cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate of 20mm nominal size) over PVC sheet 1mX1mX400micron, finished with 12mm cement plaster 1:3 (1 cement: 3 coarse sand) and a coat of neat cement rounding the edges and making and finishing the outlet complete.	4	Each	148.75	595.00
34	20mm cement plaster on external face of walls in two coats with under layer 14mm thick cement plaster 1:6 (1 cement :6 coarse sand ) finished with a top layer of 6mm thick 1:4 (1cement:4 fine sand)	180	sqm	182.90	32922.00
35	12mm cement plaster on even side of the walls in the mix:				
	1:4 (1cement :4coarse sand)	140	sqm	132.10	18494.00
36	2mm thick plaster of paris punning over the plastered surfaces on wall surfaces as directed by engineer-in-charge.	170	sqm	83.80	14246.00
37	6mm cement plaster to ceiling of mix				
	1:3 (1 cement : 3 fine sand)	30	sqm	101.00	3030.00
38	Applying priming coat				

(a)	Applying one coat of cement primer of approved brand and manufacture on wall surface:	350	sqm	27.55	9642.50
39	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade.				
	Two or more coats on new work.	170	sqm	60.25	10242.50
40	Finishing walls with Acrylic Smooch exterior paint of required shade :				
	New work (Two or more coat applied @ 1.67 Ltr/ 10 sqm over and including base coat of water proofing cement applied @ 2.20kg/10 sqm).	180	sqm	67.50	12150.00
41	Forming groove of uniform size from 12X12mm and upto 25X15mm in plastered surface and joints of ceiling and wall as per approved pattern using wooden battens, nailed to the underlayer including removal of wooden battens, repairs to the edges of plaster panel and finishing the groove complete as per specifications and directions of the Engineer-in-charge.	20.00	RM	72.15	1443.00
42	Making plinth protection 50 mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including finishing the top smooth.	20.00	sqm	338.75	6775.00
43	Providing and fixing anodised 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, anodised transparent or dyed to required shade according to IS: 1868. (Minimum anodic coating of grade AC 15), fixed with rawl plugs and screws or with fixing clips or with expansion 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	50	kg	358.30	17915.00
(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 .	250	kg	406.50	101625.00

44	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).				
	With glass panes of 5.5mm thickness (weight not less than 13.75kg/sqm)	5	sqm	905.75	4528.75
45	<p>Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: a) Applying slurry coat of neat using 2.75 kg/sqm. of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300mm height including cleaning the surface before treatment. b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs. c) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge. d) Finishing of the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement : 4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3mm deep. e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All operations to be done in order and as directed and specified by the Engineer-in-charge.</p>				
(a)	With average thickness of 120mm and minimum thickness at khurras as 65 mm.	30	sqm	786.70	23601.00
46	Providing and fixing on wall face unplasticised - Rigid PVC rain water pipes conforming to IS : 13592 Type A including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion. (i) Single socketed pipes of 75mm dia.	20	meter	124.90	2498.00

47	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 M30	10	cum	5855.00	58550.00
48	Providing and fixing Aluminum grills of required pattern in frames of windows etc. with Aluminium flats, square or round bars etc. all complete.	50	kg	388.40	19420.00
49	Add or deduct plaster drip course /groove in plastered surface or moulding to RCC projections:	35	meter	22.25	778.75
50	Providing and fixing (all dia & length) foundation bolts in position with help of proper templates including supply of templates, nuts and washers all complete as per specs, drawings & directions of Engr-in-Charge	600	kg	86.55	51930.00
51	Extra over Item above for providing galvanised bolts (Mass of zinc coating = 610gms/sqm), nuts & washer .	600	kg	8.00	4800.00
52	Fixing (all dia & length) foundation bolts in position with help of proper templates( template to be supplied by contractor) all complete as per specs, drawings & directions of Engr-in-Charge. Bolts to be provided by BHEL free of cost.	50	kg	10.00	500.00
53	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 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.	200	sqm	61.25	12250.00
54	Suppling and stacking at site				
(a)	90 mm to 45 mm size stone aggregate	40	cum	1010.75	40430.00
(b)	63 mm to 45 mm size stone aggregate	40	cum	1100.80	44032.00
(c)	Stone screening 13.2 mm nominal size (type A)	15	cum	1338.75	20081.25
(d)	moorum	5	cum	624.45	3122.25
55	Laying WBM with specified size of stone aggregates, screening and moorum/ blinding materials including screening, sorting, spreading to template and consolidation with power road roller of 8 to 10 tonne capacity etc., complete. (Payment will be made for compacted layers only ).				

(a)	Subbase with stone aggregate 90mm to 45mm including stone screening 13.2mm size and moorum/blinding material.	30	cum	330.15	9904.50
(b)	Base course with stone aggregate 63mm to 45mm including stone screening 13.2mm size and moorum/blinding material.	30	cum	330.15	9904.50
56	Brick edging in full brick with and half brick depth including excavation refilling and disposal of surplus earth lead upto 50metres.				
	With F.P.S brick of class designation 75	100	metre	84.25	8425.00
57	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)	250mm dia. RCC pipe	10	RM	342.45	3424.50
(b)	300mm dia. RCC pipe	20	RM	422.90	8458.00
(c)	450mm dia. RCC pipe	5	RM	620.85	3104.25
58	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(225mm wide,8-11mm thick)	100	meter	459.15	45915.00
59	Providing and laying stone aggregate in switch yard areas by using 40 mm aggregates size making overall thickness of stone aggregate as <b>100mm</b> . Before laying the stone aggregates , the yard surface shall be treated with antiweed treatment all complete as per direction of Engineer in Charge. (The rate shall be inclusive of all materials ,labour,loading,unloading and surface preparation etc. required for aggregate laying and antiweed treatment)	800	sqm	132.00	105600.00
60	Providing & fixing chain link fencing, all as per specifications, <b>Drg. No. TB-3-352-607-613</b> & directions of Engr-in-Charge. (The cost shall include all labour material like GI chain link fencing, fence post and angles, barbed wire,flats, tension wire, RCC, CC,PCC etc.)	170	RM	2500.00	425000.00
61	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.	2	cum	10000.00	20000.00

<b>62</b>	Dismantling and stacking within 50 metres lead, fencing posts or struts including all earth work and dismantling of concrete etc in base of:				
	T' or 'L' iron or pipe	60	each	76.00	4560.00
<b>63</b>	Dismantling barbed wire or flexible wire rope in fencing including making rolls and stacking within 50 metres lead.	50	kg	10.15	507.50
<b>64</b>	Dismantling fencing with necessary flats, angles including making rolls and stacking within 50 metres lead as per direction of engineer-in-charge	200	Sqm	21.10	4220.00
<b>65</b>	Demolishing RCC work Manually/ by mechanical means including stacking of Steel Bars and disposal of unserviceable material within 50 meters lead as per direction of Engineer-in-charge.	20	cum	978.95	19579.00
				SUM =	9496313.14