

BILL OF QUANTITY-CUM-PRICE SCHEDULE

Name of Project

: 220KV SUBSTATION AT SIKKA.

Name of Work

: CIVIL WORKS OF YARD AND CONTROL ROOM.

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
1	Earthwork in excavation 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.	3000	cum	101.85	305550.00
(b)	Ordinary rock	10000	cum	152.60	1526000.00
2	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 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	103.40	51700.00
(b)	Ordinary rock.	2500	cum	162.65	406625.00
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.	9000	cum	45.70	411300.00
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	cum	70.45	704.50
4.2	Pipes, cables etc. exceeding 80mm dia. but not exceeding 300 mm dia.	10	cum	115.05	1150.50
4.3	Pipes, cables etc. exceeding 300mm dia but not exceeding 600mm	10	cum	179.65	1796.50

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S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
(b)	Ordinary rock.				
4.4	Pipes, cables etc, not exceeding 80mm dia.	50	cum	100.20	5010.00
4.5	Pipes, cables etc. exceeding 80mm dia. but not exceeding 300 mm dia.	100	cum	248.10	24810.00
4.6	Pipes, cables etc. exceeding 300mm dia but not exceeding 600mm	100	cum	285.50	28550.00
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.	10000	cum	49.45	494500.00
(b)	Lead upto 3 km.	500	cum	63.32	31660.00
(c)	Lead upto 5 km.	500	cum	76.48	38240.00
6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.				
(a)	M20 Grade.	800	cum	3629.80	2903840.00
(b)	1:2:4 (1 cement : 2coarse sand : 4 graded stone aggregate 20mm nominal size)	50	cum	3257.45	162872.50
(c)	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size)	100	cum	2713.05	271305.00
(d)	1:4:8(1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)	100	cum	2449.00	244900.00
7	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:				
	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size)	100	cum	3034.70	303470.00
8	Extra for providing and mixing water proofing material 'Impermo' or equivalent in cement concrete work in the proportion recommended by the manufacturer.	5000	kg	27.45	137250.00
9	Supplying and filling in plinth with Jamuna/local sand under floors including watering, ramming, consolidating and dressing complete.	150	cum	301.50	45225.00
10	Supplying chemical emulsion in sealed containers including delivery as specified.				
	Chloropyriphos emulsifiable concentrate of 20%	125	litre	174.30	21787.50

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S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
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)	410	sqm	50.00	20500.00
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) .	50	sqm	178.05	8902.50
13	Applying two layers of residual petroleum bitumen of penetration 85/25 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.	50	sqm	58.60	2930.00
14	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for RCC structural elements 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. - M25 grade				
(a)	All works from plinth level to floor V level.	4050	cum	4147.40	16796970.00
(b)	Add for providing M30 concrete in RCC instead of M25 grade RCC at all levels.	550	cum	54.55	30002.50
©	Add for providing M35 concrete in RCC instead of M25 grade RCC at all levels.	3500	cum	98.20	343700.00
15	Providing and applying the anticorrosive and protective painting comprising of CPCI and ERBP painting systems on foundations or any surfaces directed by Engineer in Charge as per specification all complete.	5000	sqm	75.00	375000.00

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S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
16	Centering and shuttering including strutting, propping, etc., and removal of form for:				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	2000	sqm	119.25	238500.00
(b)	Columns, Pillars, Piers, Posts and Struts .	5000	sqm	238.40	1192000.00
(c)	RCC walls at all levels (any thickness).	9500	sqm	180.40	1713800.00
(d)	Suspended floors, roofs, landings, balconies, chajjas and access platforms at all levels.	1100	sqm	187.35	206085.00
(e)	Lintels, beams, plinth beams and cantilevers.	1500	sqm	162.65	243975.00
(f)	Stairs	100	sqm	204.00	20400.00
17	Steel reinforcement -Cold twisted bars /TMT				
(a)	Including supply and bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete. All reinforcement shall be fusion bonded epoxy coated as per IS code.	20000	kg	42.70	854000.00
(b)	Excluding supply but including bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete. (See Note No:1)	380000	kg	6.50	2470000.00
18	Brickwork with F.P.S.bricks of class designation 75 in foundation and plinth in:				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	500	cum	2121.75	1060875.00
19	Extra for brickwork in superstructure above plinth level upto floor V level.	300	cum	190.00	57000.00
20	Half brick masonry with bricks of class designation 75 in foundation and plinth in:				
	Cement mortar 1:4 (1 cement : 4 coarse sand)	200	sqm	270.35	54070.00
21	Extra for half brick masonry in superstructure above plinth level upto floor V level.	100	sqm	16.85	1685.00
22	Extra for providing and placing in position 2 Nos 8mm dia bars at every third course of half brick masonry (with FPS bricks)	100	sqm	47.80	4780.00
23	Providing and fixing 20mm thick mirror polished, machine cut for column facia, kitchen platforms, vanity counters and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement: 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing etc. complete at all levels. (over 1sqm but upto 2sqm)				
	Granite black.	10	sqm	2543.65	25436.50

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S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
24	Providing and fixing ISI marked flush door shutters decorative type ,core of block board construction with frame of Ist class hard wood and well matched reak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.				
	35 mm thick including ISI marked Stainless Steel butt hinges with nessary screws.	30	sqm	1473.50	44205.00
25	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	10	each	158.50	1585.00
26	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	10	each	71.45	714.50
27	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	10	each	48.80	488.00
28	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.	10	each	610.60	6106.00
29	Supplying and fixing rolling shutters of approved make, made of required size MS laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with mechanical arrangement for operation complete including the cost of providing and fixing necessary 27.5cm long wire springs grade no. 2 and MS top cover of required thickness for rolling shutters.				
	80 X 1.20mm MS laths with 1.20mm thick top cover.	5.00	sqm	1208.45	6042.25

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S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
30	Providing and fixing ball bearing for rolling shutters.	2	each	356.50	713.00
31	Providing & fixing 45mm steel door made of double sheet 18G steel suitably reinforced and filled with mineral wool, including frame, etc., all complete as per drawing and instruction of Engineer -in-Charge.	7	sqm	600.00	4200.00
32	Providing and fixing pressed steel door frames manufactured from commercial mild steel sheet of 1.25mm thickness including hinges, jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50X25mm, or base ties of 1.25mm pressed mild steel welded or rigidly fixed together by mechanical means, adjustable lugs with spit end tail to each jamb including steel butt hinges 2.5mm thick with mortar guards, lock strike plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-Charge:				
	Profile C	100	RM	271.65	27165.00
33	Structural steelwork welded in built up sections like edge protection angles,fencing posts and 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.	35000	kg	42.15	1475250.00
34	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.	10000	kg	48.95	489500.00
(b)	In gratings, frames, ladders, stair railings, gates (including pipes)and similar works.	2000	kg	51.20	102400.00

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S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
35	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.	20	sqm	192.95	3859.00
36	52mm thick CC flooring with " Hardcrete" concrete hardner topping under layer 40mm thick CC 1:2:4 (1cement:2 coarse sand: 4 stone aggregate 20mm nominal size) 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 Hradcrete 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.	350	sqm	286.55	100292.50
37	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	120	sqm	168.50	20220.00
38	Precast terrazo tiles 22 mm thick with graded marble chips of size upto 12mm laid in floors, and landings, jointed with neat cement slurry mixed with pigment to match the shade of the tiles including rubbing and polishing complete with precast tiles on 20mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand)				
	Light shade using white cement	200	sqm	566.95	113390.00
39	Precast terrazo tiles 22 mm thick with graded marble chips of size upto 12mm laid in skirting and risers of steps not exceeding 30 cm in height on 12mm cement plaster 1:3(1 cement :3 coarse sand), jointed with neat cement slurry mixed with pigment to match the shade of the tiles including rubbing and polishing complete with precast tiles of :				
	Light shade using white cement	25	sqm	665.75	16643.75

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S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
40	Providing and fixing 20mm thick acid and or alkali resistant tiles of approved make and colour using acid and or alkali resisting mortar bedding and joints filled with acid and or alkali resisting cement as per IS : 4457 complete as per the direction of Engineer-in- Charge				
(a)	In flooring on a bed of min.20 mm thick mortar 1:4 (1appropriate cement : 4 coarse sand)	40	sqm	873.00	34920.00
(b)	In dado / skirting on 12 mm thick mortar 1:4 (1 appropriate cement : 4 coarse sand)	60	sqm	909.15	54549.00
41	Providing and fixing 1st quality ceramic glazed tiles conforming to IS:13753 of minimum thickness 5 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.	20	sqm	556.60	11132.00
42	Providing and laying 1st quality ceramic glazed tiles 300X300 mm (thickness to be specified by manufacturer) conforming to IS:13755 of minimum thickness 7 mm of approved make and colours laid over 20 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.	20	sqm	598.65	11973.00
43	Providing and laying in floors heavy duty matt finish ceramic tiles of 10mm thickness without warpage of approved make and colour laid in 20mm thick cement mortar 1:4 (1 cement: 4 coarse sand) including grouting the joints with white cement and matching pigment, etc., complete.	20	sqm	550.00	11000.00
44	Providing and laying of 7 mm minimum thick pre-polished vitrified tiles 600X600 mm of approved make and colours laid over 20 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.	65	sqm	1448.55	94155.75

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S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
45	Providing and fixing approved quality pre polished vitrified tiles minimum thickness 7 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.	20	sqm	570.40	11408.00
46	Providing and fixing homogenous polyvinyl chloride sheet/tile in flooring and skirting in approved pattern on a smooth and damp proof base using rubber based adhesive of approved quality and manufacturer like Dunlop S-758, Fevicol SR 998 or equivalent including rolling with light wooden roller weighing about 5kg all complete as directed by Engineer-in-charge, in approved colour and shade.				
	2mm thick sheet	200	sqm	700.00	140000.00
47	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.	6	Each	108.00	648.00
48	18mm cement plaster on external face of walls in two coats with under layer 12mm thick cement plaster 1:6 (1 cement :6 coarse sand) finished with a top layer of 6mm thick 1:4 (1cement:4 fine sand)	1000	sqm	111.15	111150.00
49	18mm cement plaster in cement plaster 1:6 (1 cement :6 coarse sand) on uneven sides of internal walls and surfaces of roof as required.	1500	sqm	84.55	126825.00
50	12mm cement plaster on even side of the walls in the mix: 1:4 (1cement :4coarse sand)	800	sqm	82.55	66040.00
51	2mm thick plaster of paris punning over the plastered surfaces on wall surfaces as directed by engineer-in-charge.	1500	sqm	47.20	70800.00
52	6mm cement plaster to ceiling of mix 1:3 (1 cement : 3 fine sand)	950	sqm	62.15	59042.50

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S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
53	Applying priming coat				
(a)	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works.	100	sqm	12.65	1265.00
(b)	Applying one coat of cement primer of approved brand and manufacture on wall surface:	500	sqm	17.20	8600.00
54	Whitewashing with lime to give an even shade				
	New work (3 or more coats)	1000	sqm	6.75	6750.00
55	Distempering with oil bound washable distemper of approved brand and manufacture two or more coats over and including priming coat with cement primer.(Work to be carried as per relevant IS codes.)	1000	sqm	41.55	41550.00
56	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade.				
	Two or more coats on new work.	500	sqm	40.05	20025.00
57	Finishing walls with water proofing cement paint "Snowcem-Plus" of M/s Snowcem India Ltd. or equivalent of required shade :				
	New work : Two or more coat.	2000	sqm	30.80	61600.00
58	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade:				
	Two or more coats on new work.	200	sqm	33.25	6650.00
59	Painting with acid proof paint of approved brand and manufacture of required colour to give an even shade.				
	Two or more coats on new work.	200	sqm	32.40	6480.00
60	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.	1000.00	RM	13.30	13300.00

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S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
61	Making plinth protection 50mm thick of cement concrete 1:3:6(1 cement:3 coarse sand:6 graded stone aggregate 20 mm nominal size) over 75 mm bed by dry brick ballast 40 mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth.	50.00	sqm	222.65	11132.50
62	Providing and fixing white vitreous china water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast iron P or S trap, 10 litre low level P.V.C. flushing cistern (of approved make) with fittings, C.I./M.S. brackets, 32 mm diameter flush pipe with fittings and clamps, overflow arrangement with specials and mosquito proof coupling of approved municipal design including painting of fittings and brackets, cutting and making good the walls and floors wherever required.				
	Orissa pattern W.C. Pan of size 580 x 440 mm with integral type foot rests flush pipe and overflow arrangement.	1	each	2304.65	2304.65
63	Providing and fixing white vitreous china pedestal type water closet (European type W.C. Pan) with seat and lid, C.P. Brass hinges and rubber buffers, 10 litre low level flushing cistern with fittings & CI/MS brackets 40mm dia flush bend , overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design compete including painting of fittings and brackets, cutting and making good the walls and floors wherever required :				
	W.C. pan with black solid plastic seat and lid with white vitreous china flushing cistern and CP flush bend.	1	each	3253.95	3253.95

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S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
64	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430 x260x 350 mm and 340 x 410 x 265 mm sizes respectively with automatic flushing cistern with C.I./ M.S brackets standard flush pipe and C.P. brass spreaders with brass unions and G.I. clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required:				
	One urinal basin with 5 litre P.V.C automatic flushing cistern of approved make.	2	each	2018.70	4037.40
65	Providing and fixing vitreous china under counter wash basin in oval shape of approved colour and size with 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings etc. cutting and making good the walls wherever required:	2	each	1332.90	2665.80
66	Providing and fixing 100 mm sand cast iron grating for gully, floor or Nahani trap.	2	each	16.45	32.90
67	Providing and fixing 600 x 450 x5.5 mm bevelled edge mirror of float glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. Brass screws and washers complete.	2	each	493.65	987.30
68	Providing and fixing 600 x 120 x 5 mm glass shelf with edges rounded off supported on anodised aluminium angle frame with C.P. Brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc. complete.	2	each	218.80	437.60
69	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with C.P. Brass screws with concealed fitting arrangement of approved quality and make.				
	600 mm long towel rail with total length of 645mm,width 78mm and effective height 88mm,weing not less than 190gms.	1	each	329.50	329.50

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S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
70	Providing and fixing PTMT liquid soap container 109mm wide,125mm high and 112mm distance from wall of standard shape with bracket of same materials with snap fittings of approved quality ,colour and make ,weighing not less than 105 gm (Prayag or equivalent).	2	each	164.65	329.30
71	Providing and fixing Hand drier electrically operated with photo voltaic control with all fittings etc. all complete as per direction of engineer-in-charge.	1	each	6000.00	6000.00
72	Providing and fixing toilet paper holder. CP brass.	2	each	147.10	294.20
73	Providing and fixing soil, waste and vent pipes: 100 mm dia. Sand cast iron S & S pipe.	15	RM	451.00	6765.00
74	Providing and fixing M.S holder-bat clamps of approved design to Sand Cast iron/ cast iron (spun) pipe embedded in and including cement concrete blocks 10 x 10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including cost of cutting holes and making good the walls etc. For 100 mm dia pipe	20	each	65.35	1307.00
75	Providing lead caulked joints to SCl pipes and fittings of diameter 100mm	20	each	126.50	2530.00
76	Providing and fixing SCl trap of self cleansing design with SCl screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors: 100mm inlet and 100mm outlet.	2	each	544.30	1088.60
77	Providing and fixing G.I. Pipes (medium grade) complete with G.I. Fitting and clamps , including cutting and making good the walls etc. (internal work).				
(a)	15 mm dia nominal bore.	50	RM	105.85	5292.50
(b)	20 mm dia nominal bore.	10	RM	133.85	1338.50
(c)	25 mm dia nominal bore.	5	RM	179.65	898.25

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S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
78	Providing and fixing G.I. Pipes (medium grade) complete with G.I. Fitting and clamps , including trenching and refilling, etc. (external work).				
(a)	15 mm dia nominal bore.	10	RM	94.05	940.50
(b)	20 mm dia nominal bore.	50	RM	116.60	5830.00
©	40 mm dia nominal bore.	50	RM	219.60	10980.00
79	Making connection of GI distribution branch with GI main of following sizes by providing and fixing tee, including cutting and threading the pipe etc., complete.				
	25 to 40mm nominal bore.	1	each	166.05	166.05
80	Providing and fixing brass bib cock of approved quality				
	15mm nominal bore	4	each	191.70	766.80
81	Providing and fixing brass stop cock of approved quality				
	15mm nominal bore	4	each	191.70	766.80
82	Providing and fixing brass gate valve with CI wheel of approved quality (screwed end)				
(a)	25mm nominal bore	1	each	285.50	285.50
(b)	32mm nominal bore	1	each	358.00	358.00
83	Providing and fixing ball valve brass of approved quality complete.				
84	High or low pressure with plastic floats				
	15mm nominal bore	1	each	228.35	228.35
85	Providing and placing on terrace (at all floor levels) polyethylene water storage tank of approved brand and manufacture with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank. The tank should be ISI marked .	1000	per litre capacity	5.25	5250.00
86	Providing, laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the proportion of 1:3 (1 cement : 3 fine sand) including testiing of joints etc. complete.				
(a)	100 mm diameter.	50	RM	105.90	5295.00
(b)	150 mm diameter.	50	RM	151.65	7582.50

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REV NO:01

Name of Project**: 220KV SUBSTATION AT SIKKA.****Name of Work****: CIVIL WORKS OF YARD AND CONTROL ROOM.**

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
87	Providing and fixing square-mouth S.W. Gully trap grade 'A' complete with C.I. Grating brick masonry chamber with bricks of class designation 75 and water tight C.I. Cover with frame of 300 x 300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as standard design.:				
	100 x 100 mm size P type				
	With F.P.S bricks	2	each	935.15	1870.30
88	Constructing brick masonry manhole with 75 class designation bricks in cement mortar 1:4 (1 cement: 4 coarse sand) RCC top slab with 1:2:4 mix(1 cement:2 coarse sand: 4 graded stone aggregate 20mm nominal size) foundation concrete 1:4:8 (1 cement: 4 coarse sand: 8 graded stone aggregate 40mm nominal size) inside plastering 12mm thick with cement mortar 1:3 (1 cement: 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 mix(1 cement:2 coarse sand: 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.				
	Inside size 90X80cm and 45cm deep including CI cover with frame (light duty) 455X610mm internal dimensions total weight of cover and frame to be not less than 38kg (weight of cover 23kg and weight of frame 15kg)				
	With FPS bricks	2	each	5383.70	10767.40
89	Extra for depth for manholes				
	Size 90X80cm				
	With FPS bricks	10	RM	2654.00	26540.00
90	Making soak pit 2.5m diameter 3m deep with 45X45cm dry brick honeycomb shaft with bricks of class designation 75 and SW drain pipe 100mm diameter, 1.8m long complete as per standard design and specification.				
	With FPS bricks	1	each	9938.65	9938.65

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REV NO:01Name of Project
Name of Work: 220KV SUBSTATION AT SIKKA.
: CIVIL WORKS OF YARD AND CONTROL ROOM.

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
91	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	1200	kg	290.45	348540.00
(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.	2400	kg	310.45	745080.00
92	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)	300	sqm	673.55	202065.00
93	Providing and fixing double action hydraulic floor spring of approved brand and manufacture (conforming to IS:6315) for aluminium door including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece MS sheet outer box with slide plate etc., complete as per the directions of Engineer-in-charge. (SS cover plate.)	6	each	1733.50	10401.00

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REV NO:01**Name of Project**
Name of Work**: 220KV SUBSTATION AT SIKKA.**
: CIVIL WORKS OF YARD AND CONTROL ROOM.

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
94	Providing, laying and fixing roof water proofing treatment using two successive liquid coatings of high solid content urethane pre-polymers to form elastomeric membrane having overall dry film thickness of minimum 1.5mm subject to minimum 750gm/sqm/coat application rate including primer coat consisting of polyurethane or any other equivalent material , finishing coats and surface finish complete laid over cement plaster (1:6) grading on screed concrete (cement plaster and screed paid seperately) mix all complete including all labour, material, equipment, handling, scaffolding, transporting, testing etc. complete as per drawing, specification and instructions of the engineer.	450	sqm	1000.00	450000.00
95	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.	60	meter	95.00	5700.00
96	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	200	cum	4500.00	900000.00
97	Providing and fixing M.S. grills of required pattern in frames of windows etc. with MS flats,square or round bars etc. all complete.	2500	kg	59.25	148125.00
98	Add or deduct plaster drip course /groove in plastered surface or moulding to RCC projections:	200	meter	11.95	2390.00
99	Providing & fixing 0.5mm thick precoated Al-Lineal false ceiling in approved pattern all complete including fixing ,leaving cut out etc required for completion of works as per direction of Engineer-in -Charge.	400	sqm	1500.00	600000.00

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Name of Project**: 220KV SUBSTATION AT SIKKA.****Name of Work****: CIVIL WORKS OF YARD AND CONTROL ROOM.**

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
100	Painting with chemical resistant epoxy paint (two or more coats) at all locations prepared and applied as per manufacture's specifications including appropriate priming coat, preparation of surface etc. complete.	50	sqm	57.25	2862.50
101	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	30000	kg	62.75	1882500.00
102	Extra over Item above for providing galvanised bolts (Mass of zinc coating = 610gms/sqm), nuts & washer .	30000	kg	5.00	150000.00
103	Providing and fixing thermal insulation of ceiling (under deck insulation) with Resin Bonded Fibre glass wool conforming to IS : 8193 (Twiga Insul 1500/50mm or equivalent) density 24 kg/m3, 50 mm thick, wrapped in 200 G Virgin polythene bags fixed to Ceiling with metallic cleats (50x50x3 mm) @ 60cm and wire mesh of 12.5 mm x 24g wire and mesh, for top most ceiling of building .	400	sqm	310.10	124040.00
104	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.	2000	kg	7.00	14000.00
105	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.	3750	sqm	33.90	127125.00
106	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	3750	sqm	4.50	16875.00
107	Providing and laying compacted 150mm thick layer of moorum shoulder on both sides of road as per direction of Engineer-in -Charge.	1500	Sqm	75.00	112500.00

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REV NO:01

Name of Project**: 220KV SUBSTATION AT SIKKA.****Name of Work****: CIVIL WORKS OF YARD AND CONTROL ROOM.**

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
108	Proving and laying factory made anti skid precast interlocking cement paver blocks on the shoulder of the road as per direction of Engineer-in-Charge all inclusive. (The thickness of paver block shall be 50mm).	1500	Sqm	180.00	270000.00
109	Suppling and stacking at site				
(a)	90 mm to 45 mm size stone aggregate	570	cum	742.30	423111.00
(b)	63 mm to 45 mm size stone aggregate	470	cum	768.45	361171.50
(c)	53 mm to 22.4 mm size stone aggregate	470	cum	810.55	380958.50
(d)	Stone screening 13.2 mm nominal size (type A)	100	cum	892.25	89225.00
(e)	Stone screening 11.2 mm nominal size (type B)	100	cum	979.40	97940.00
(f)	moorum	100	cum	421.85	42185.00
110	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.	570	cum	192.55	109753.50
(b)	Base course with stone aggregate 63mm to 45mm including stone screening 13.2mm size and moorum/blinding material.	470	cum	192.55	90498.50
(c)	Base course with stone aggregate 53mm to 22.4 mm including stone screening 11.2mm size and	470	cum	192.55	90498.50
111	Providing and laying 2.5 cm thick premix carpet surfacing with 3 cum of stone chippings 10mm nominal size per 100sqm and bitumen emulsion (Min. 65% bitumen content) of approved quality using 96 kg per cum of chippings including a tack coat of 1 kg bitumen emulsion per sqm of road surface including consolidation with road roller of 6 to 9 tonne capacity etc., complete.	3750	sqm	105.70	396375.00
112	Providing and laying seal coat of premixed fine aggregate (passing 2.36 mm and retained on 180 micron sieve) with bitumen using 128 kg of bitumen of grade 80/100 bitumen per cum of fine aggregate and 0.60 cum of fine aggregate per 100 sqm of road surface including rolling and finishing with road roller all complete.	3750	sqm	36.85	138187.50

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Name of Project**: 220KV SUBSTATION AT SIKKA.****Name of Work****: CIVIL WORKS OF YARD AND CONTROL ROOM.**

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
113	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement 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 to more than 5 mm) including making drainage openingswherever required complete etc. as per 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).	100	cum	4247.70	424770.00
114	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	173.95	1739.50
(b)	150mm dia. RCC pipe	20	RM	202.85	4057.00
(c)	250mm dia. RCC pipe	50	RM	258.20	12910.00
(d)	300mm dia. RCC pipe	50	RM	338.75	16937.50
(e)	450mm dia. RCC pipe	50	RM	499.55	24977.50
115	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)	250mm dia. RCC pipe	50	RM	200.00	10000.00
(b)	300mm dia. RCC pipe	50	RM	300.00	15000.00
(c)	450mm dia. RCC pipe	50	RM	425.00	21250.00
116	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.				
	Serrated with central bulb(225mm wide,8-11mm thick)	100	meter	386.75	38675.00

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Name of Project**: 220KV SUBSTATION AT SIKKA.****Name of Work****: CIVIL WORKS OF YARD AND CONTROL ROOM.**

S.No.	Description of Item	Quantity	Unit	Unit Rate(Rs)	Amount(Rs)
117	Providing and laying stone aggregate in switch yard areas in 100mm thick layer using 40 mm aggregates size .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)	35000	sqm	100.00	3500000.00
118	Providing and fixing PVC coated GI chain link fencing of minimum 8 gauge supported by steel posts.The fencing shall be reinforced with at every fourth span and at all bend locations. A brick kerb wall projecting 300mm above grade level shall be provided all along the fence with drainage pipe at intervals in the kerb wall .The total height of the fencing shall be 2700mm including the kerb wall .The work shall be carried out with the approved drawing ,instructions of Engineer-in-Charge including all allied activities required as per drawing all complete .(Payment for excavation,backfilling ,PCC, Kerb wall construction ,plaster, structural steel like angles or flats ,pipes ,inserts shall be made saperately under individual items .The payment of GI fencing,straining wires,clips,clamps,hardware and welding etc .required for completion of works shall be paid under this item . The area of fence shall be calculated based on the clear height of chain link excluding the kerb wall.)	1320	SQM	300.00	396000.00
119	Grouting of block outs, pockets, foundations, bolts holes and underside of base plates with ready mixed grout or grout consisting of 2 parts by weight of sand, 1 part by weight of cement including approved plasticizer, non-shrink admixture, in the required proportion as recommended by manufacturer/Engineer, including placing, curing, cleaning, surface preparation, testing, etc. com-plete with labour, materials, equipment, handling, testing, etc. all complete as per specifications, drawings and instructions of the Engineer.	20	cum	10000.00	200000.00
				Total	49658510.05

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: 17(b) above shall be deemed to be inclusive of cost against all activities required including transportation of material from nearest SAIL stockyard.