

BILL OF QUANTITY-CUM-PRICE SCHEDULE**Name of Project : 400KV GIS SUBSTATION AT ENNORE SEZ.****Name of Work : CIVIL WORKS OF YARD (EXCLUDING BUILDING WORK)**

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) dewatering as necessary of rain water/subsoil seepage water and disposal of excavated earth upto 100m, disposed earth to be levelled and neatly dressed all complete for following depth				
(a)	All kinds of soil (including any stone aggregate etc.)- upto 4m depth	10500	cum	129.35	1358175.00
(b)	All kinds of soil (including any stone aggregate etc.)- for additional 4m to 6m depth	1050	cum	111.70	117285.00
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 .	3150	cum	130.80	412020.00
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.				
		8460	cum	83.80	708948.00
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.	3000	cum	82.78	248340.00
(b)	Lead upto 3 km.	1000	cum	104.98	104980.00
(c)	Lead upto 5 km.	200	cum	125.92	25184.00

5	Supplying and filling in plinth with Jamuna/local sand under floors including watering, ramming, consolidating and dressing complete.	50	cum	749.30	37465.00
6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work upto plinth level.				
(a)	Concrete grade M20 .	20	cum	4904.95	98099.00
(a)	Concrete grade M15 .	15	cum	4514.05	67710.75
(b)	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size)	20	cum	4024.00	80480.00
(c)	1:4:8(1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)	655	cum	3593.30	2353611.50
7	Extra for providing and mixing water proofing material in cement concrete work @ 1kg per 50kg of cement.	1000	per 50kg cement	35.35	35350.00
8	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. - M25 grade reinforced cement concrete by using minimum 330kg of cement per cum of concrete.				
(a)	All works upto plinth level	2500	cum	5242.15	13105375.00
(b)	All works above plinth level upto floor V level	50	cum	5781.50	289075.00
9	Extra for providing richer mixes at all floor levels.				
(a)	Providing M-30 grade concrete instead of M-25 grade BMC/RMC.(Cement content in M-30 shall be min @340kg/cum)	700	cum	63.20	44240.00
10	Providing, laying and compacting boulder soiling of required thickness in foundations of equipment and under the floors as per direction of Engineer-in-Charge.	400	cum	1010.75	404300.00
11	Centering and shuttering including strutting, propping, etc., and removal of form at all heights for.				
(a)	Foundations, footings, bases of columns, etc., for mass concrete.	1940	sqm	166.90	323786.00
(b)	Columns, Pillars, Piers, Posts and Struts .	4000	sqm	365.60	1462400.00
(c)	RCC walls at all levels (any thickness).	5550	sqm	285.15	1582582.50
(e)	Lintels,beams,plinth beams and cantilevers.	650	sqm	262.25	170462.50

12	Steel reinforcement -Cold twisted bars /TMT- Fe 500 (To be procured from SAIL,TISCO,IISCO, JINDAL STEEL and RINL only)				
(a)	Including supply, straightening, cutting and bending, binding (i/c cost of binding wire), placing in position, etc., all labour & material, complete.	15000	kg	62.25	933750.00
(b)	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 supplied by BHEL free of cost).	660000	kg	10.00	6600000.00
13	Extra over item 12 (a) & (b) for providing FUSION BONDED EPOXY COATING as per IS:13620 including the transportation of reinforcement steel to bidder's plant and bringing back to site and special handling during straightening,cutting,bending ,placing and providing PVC coated binding wire.	675000	kg	10.00	6750000.00
14	Brickwork with flyash bricks of class designation 75 in foundation and plinth in:				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	100	cum	3316.55	331655.00
15	12mm cement plaster of mix:				
	1:4 (1cement: 4 coarse sand)	400	sqm	132.10	52840.00
16	Structural steelwork welded in built up sections like edge protection angles,insert plates with lugs & framed work including providing, cutting, hoisting, fixing in position/ embedding in concrete and applying a priming coat of approved steel primer all complete.	28000	kg	59.90	1677200.00
17	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 gratings, rails ,mono rails, frames, ladders, stair railings, gates(including pipe) ,gantry girder(beams,channels etc) and similar works.	15000	kg	77.90	1168500.00
18	Extra over Item above for providing galvanising (Mass of zinc coating = 610gms/sqm), all complete.	2000	kg	4.50	9000.00
19	Providing, laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testiing of joints etc. complete.				
(a)	100 mm diameter.	15	RM	150.10	2251.50
(b)	150 mm diameter.	20	RM	219.05	4381.00

(c)	200 mm diameter.	20	RM	323.05	6461.00
20	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	86.55	2596500.00
21	Extra over Item above for providing galvanised bolts (Mass of zinc coating = 610gms/sqm), nuts & washer	30000	kg	4.50	135000.00
22	Preparation and consolidation of subgrade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5cm depth, dressing to camber and consolidating with road roller including making good the undulations etc., and re-rolling the sub grade and disposal of surplus earth lead upto 50m.	2800	sqm	61.25	171500.00
23	Suppling and stacking at site				
(a)	90 mm to 45 mm size stone aggregate	380	cum	1010.75	384085.00
(b)	63 mm to 45 mm size stone aggregate	350	cum	1100.80	385280.00
(c)	53mm to 22.4 mm	300	cum	1190.80	357240.00
(d)	Stone screening 13.2 mm nominal size (type A)	225	cum	1338.75	301218.75
(e)	11.2 mm nominal size (Type B)	100	cum	1425.85	142585.00
(f)	moorum	80	cum	624.45	49956.00
24	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.	280	cum	330.15	92442.00
(b)	Base course with stone aggregate 63mm to 45mm including stone screening 13.2mm size and moorum/blinding material.	280	cum	330.15	92442.00
©	Base course with stone aggregate 53mm to 22.4 mm including stone screening 11.2mm size and moorum/binding material.	280	cum	330.15	92442.00
25	Providing and fixing at or near ground level factory made kerb stone of M-25 grade cement concrete 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 5mm), including making drainage opening wherever required complete tec. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for calculation of qty. for payment).	100	cum	5046.80	504680.00

26	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)	150mm dia. RCC pipe	10	RM	254.50	2545.00
(b)	250mm dia. RCC pipe	20	RM	342.45	6849.00
(c)	300mm dia. RCC pipe	20	RM	422.90	8458.00
(d)	450mm dia. RCC pipe	20	RM	620.85	12417.00
27	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	10	RM	338.40	3384.00
(b)	300mm dia. RCC pipe	20	RM	469.80	9396.00
(c)	450mm dia. RCC pipe	20	RM	684.00	13680.00
(d)	600mm dia. RCC pipe	10	RM	912.00	9120.00
28	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)	65	meter	459.15	29844.75
29	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	50	cum	5900.00	295000.00
30	Providing and laying stone aggregate in switch yard areas in 150mm thick layer using 20-40 mm aggregates size of 75mm thk. on top and 20mm of thk. 75mm at bottom .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, compaction and micro grading etc. required for aggregate laying and antiweed treatment)	13730	sqm	200.00	2746000.00
31	Brick pitching 75mm thick (flat brick) in switchyard area including supply of bricks and preparing the surface complete:				
	With Fly Ash bricks of class designation 7.5	13730	sqm	194.14	2665542.20

32	Supplying, fabricating and fixing angle iron posts (for chain link fencing), flats/angles of required size including bottom of post to be split and bent and top to be made Y shaped by cutting, bending and welding including drilling holes and finishing by painting with chlorinated rubber paint over suitable primer or epoxy based paint (of total DFT 250 microns) etc. all complete as per direction of Engineer-in-charge.(Cost of excavation, shuttering, concrete work, toe wall to be paid separately)	13750	kg	62.10	853875.00
33	Providing and fixing PVC coated G.I chain link fence of 8 gauge (G.I + PVC coating) with mesh size 75x75 mm of 12 gauge G.I chain link of required ht. above the toe wall including stretching and attaching by clips at 0.5m interval or as per drg. to 3 strands of HTSS wire of 4mm dia interwoven in chain link wire mesh and attaching to the fence post with nuts and bolts all complete as per approved drawing and direction of Engineer-in-Charge. (The rate quoted against this item shall be inclusive of all items like chain link fence, clips, HTSS wire, nuts and bolts etc. all complete as per drawing).	1250	sqm	519.15	648937.50
34	Providing and fixing concertina coil fencing with punched tape concertina coil 600 mm dia 10 metre openable length (total length 90 m), having 50 nos rounds per 6 metre length, and fixing in existing angle iron 'Y' shaped placed 2.4 m or 3.00 m apart and with 3 horizontal barbed wire and 3 diagonals interwoven wires, stud tied with G.I. staples and G.I. clips to retain horizontal, including necessary bolts or G.I. barbed wire tied to angle iron, all complete as per direction of Engineer-in-charge, with Spring core (2.5mm thick) wire of high tensile strength of 165 kg/sq.mm with tape (0.52 mm thick) and weight 43.478 gm/ metre (cost of post angle, shall be paid separately)	645	m	269.20	173634.00
35	Grouting of block outs, pockets, foundations, bolts holes and underside of base plates with cement, sand aggregate (of size 6 mm and down) grout M-30 with non-shrink additive and shall be of strength not less than M30 including placing, curing, cleaning, surface preparation, testing, etc. complete with labour, materials, equipment, handling, testing, etc. all complete as per specifications, drawings and instructions of the Engineer.	5	cum	10000.00	50000.00

36	Providing and fixing in position 12mm thick bitumen impregnated fibre board conforming to IS:1838 including cost of primer, sealing compound in expansion joints.	100	per cm depth per 100m	430.30	43030.00
37	Providing and fixing in position pre moulded joint filler in expansion joints	100	per cm depth per cm width per m length	2.40	240.00
38	Providing and laying in position bitumen hot sealing compound for expansion joints etc. Using grade A ceiling compound	100	per cm depth per cm width per m length	1.65	165.00
39	Providing and laying polythene sheet of 125 microns between the PCC and RCC slab all complete as per direction of Engineer-in-Charge)	2800	sqm	39.00	109200.00
40	Providing and laying 80mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/shape laid in required colour and pattern over and including 100mm thick compacted bed of coarse sand, filling the joints with coarse sand etc. all complete as per direction of Engineer-in- charge.	2100	sqm	536.65	1126965.00
41	Providing and applying two layers of residual petroleum bitumen of penetration 85/25 of approved quality using 1.7 kg per sqm on the side faces of foundations after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.(For all lifts and leads).	2950	sqm	190.00	560500.00
42	Filling of approved materials i/c cost of materials, labour and equipment for handling, transportation, placing and compacting as required to the required density and to the required elevations as per specification, drawings and directions of Engineer-in-Charge.				
	Broken/crushed/non crushed stone of size 40 to 60mm for placing over transformer grating.	20	cum	1100.80	22016.00

43	Boring, providing and installing bored cast-in-situ reinforced cement concrete pile of specified diameter and length below the pile cap M30 in cement concrete, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with, bentonite solution and temporary casing of appropriate length for setting out and removal of same and the length of pile to be embedded in the pile cap etc. all complete, including removal of excavated earth with all lifts and leads (Length of pile for payment shall be measured upto bottom of pile cap)				
(a)	600mm dia piles	4000	meter	3328.80	13315200.00
(b)	760mm dia piles	5500	meter	4815.20	26483600.00
44	Vertical load testing of pile in accordance with IS 2911 (Part IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification & the direction of Engineer in-charge.				
	Single pile upto 150 tonne capacity				
	Initial test	1	per test	46808.45	46808.45
	Routine test	1	per test	26714.50	26714.50
45	Lateral load testing of single pile in accordance with IS Code of practice IS:2911 (Part IV) for determining safe lateral load on pile:				
	Upto 50 tonne capacity pile.	1	per test	17422.50	17422.50
46	Integrity testing of pile using low strain/sonic integrity test/sono echo test method in according with IS 14893 including surface preparation of pile top by removing soil, mud, dust and chipping lean concrete lumps etc. and use of computerised equipment and high skill trained personal for conducting the test and submission of the results, all complete as per direction of Engineer-in-charge.				
		50	per test	696.90	34845.00
47	Stripping pile head to cut off level and exposing pile reinforcement for embedment in pile cap including cleaning, brushing, disposing the material all complete as per direction of Engineer-in-charge.				
		525	cum	900.00	472500.00
48	Demolishing brick work manually/by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.				
a	In cement mortar	5	cum	566.60	2833.00

49	Demolishing RCC work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.		cum		
		10		978.95	9789.50
					95671789.90