

BILL OF QUANTITY**Name of Project****: 400kV Substation Extension at Udumalpet.****Name of Work****: Civil Works of Yard**

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
1	Carriage of surplus excavated earth beyond initial lead of 50m by mechanical transport not necessarily all the time on pucca roads, for the following additional leads including loading, unloading, dressing of excavated material etc. completed as per specifications lead upto 1.0 km.				
(a)	Earth	cum	3,975		
2	Earth work in excavation over areas (Exceeding 30 cms in depth, 1.5 m in width as well as 10 sq mtrs on the plan) including disposal of the excavated earth, lead upto 100 m and lift upto 3.5 m, disposed earth to be levelled and neatly dressed:				
(a)	All kinds of soil	cum	500		
3	Earthwork in excavation in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan) including 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 50m.				
(a)	All kinds of soil	cum	200		
4	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc in layers not exceeding 20cm in depth : consolidating each deposited layer by ramming and watering, for all lifts and all leads	cum	250		
5	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering all work upto plinth level. (Cement to be supplied by BHEL free of cost)				
(a)	1:4:8 (1 Cement : 4 coarse sand: 8 graded stone aggregate 40mm nominal size)	cum	120		
6	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centring, shuttering, finishing and reinforcement - all work upto plinth level (rafts, columns, walls & plinth beams) . (Cement to be supplied by BHEL free of cost)				
(a)	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	cum	655		

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
7	Providing & fixing in position precast cement concrete trench covers, coping, roof units, fascia, RCC grills, etc., 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, and of following grade: (Cement to be supplied by BHEL free of cost)				
(a)	1:1.5:3	cum	20		
8	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. complete with labour, materials, equipment, handling, testing, etc. all complete as per specifications, drawings and instructions of the Engineer. (Cement to be supplied by BHEL free of cost)	cum	3		
9	Centring and shuttering including strutting, propping etc and removal of form for :				
(a)	Foundations, footings, bases of columns etc for mass concrete	sqm	700		
(b)	Walls (any thickness) including attached pilasters, buttresses plinth and string courses etc.	sqm	700		
(c)	Columns, pillarspiers, Abutments, Posts and Struts	sqm	1,200		
10	Reinforcement of RCC work including straightening, cutting, bending, placing in position and binding all complete. (Reinforcement to be supplied by BHEL free of cost)				
(a)	Cold twisted/ TMT bars	Kg	34,000		
11	Brick work with F.P.S bricks of class designation 75 in foundation and plinth (Cement to be supplied by BHEL free of cost) in				
(a)	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	50		
12	12mm cement plaster finished with a floating coat of neat cement of mix 1:4 (1 cement : 4 fine sand) (Cement to be supplied by BHEL free of cost)	sqm	250		
13	Providing and fixing (all dia & length) GI foundation bolts in position with help of proper templates including nuts and washers all complete as per specs, drawings & directions of Engr-in-Charge. (Mass of zinc coating = 610gms/sqm)	kg	8,000		

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14	Fixing (all dia & length) foundation bolts in position with help of proper templates including nuts and washers all complete as per drawings & directions of Engr-in-Charge. (Bolts to be supplied by BHEL)	kg	500		
15	Structural steelwork welded in built up sections like monorails, channel/beam supports for roofing & trfr/reactor gratings, 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.	kg	12,000		
16	Preparation of subgrade by excavating earth to an average of 22.5cm depth, dressing to camber and consolidating with road roller including making good the undulations etc., and disposal of surplus earth lead upto 50m.	sqm	1,875		
17	Consolidation of subgrade with power road roller of 8 to 12 tonne capacity including making good the undulations etc. with earth or quarry spoils etc. and rerolling the subgrade.	sqm	1,875		
18	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	sqm	1,875		
19	Supplying and stacking of graded stone aggregate at site of size range				
(a)	63mm to 45mm	cum	300		
(b)	53mm to 22.4mm	cum	300		
20	Laying WBM with specified stone aggregate stone screening and blinding material including screening, sorting, spreading to template and consolidation with power road roller of 8 to 10 tonne capacity etc., complete (payment for stone aggregate, screenings, kankar, moorum and red bajri etc., to be made separately)				
(a)	Base course with stone aggregate 63mm to 45mm including stone screening 13.2mm size.	cum	300		
(b)	Base course with stone aggregate 53mm to 22.4mm including stone screening 11.2mm size.	cum	300		
21	Supplying and stacking of stone screenings/chippings at site				
(a)	13.2mm nominal size (Type A)	cum	30		
(b)	11.2mm nominal size (Type B)	cum	30		

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
22	2.5 cm 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.	sqm	1,875		
23	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.	sqm	1,875		
24	Providing and installing PVC sealing strip at all elevations including the cost of all labour, materials, equipment, cutting, bending, placing, jointing, splicing, anchors etc. complete as per drawings				
(a)	225 mm wide with a central bulb and at least 20 bibs and a thickness of 8 mm.	RM	20		
25	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. (Cement to be supplied by BHEL free of cost)				
(a)	300mm dia. RCC pipe	RM	20		
26	Providing & fixing chain link fencing including all allied activities, all complete as per PGCIL specification (Clause 8.0, Technical Specification Section: Civil Works C/ENGG/SPEC/CIVIL Rev No:06), drawing and directions of Engineer-in-charge. (Rate shall be inclusive of all items like chainlink fence, galvanised tubular posts, flats, PCC. painting etc.) (Cement to be supplied by BHEL free of cost)	RM	250		
27	Dismantling of existing fence and reerecting the same at new location all complete as per drawing & directions of Engineer-in-charge.	RM	250		
28	Providing & fixing gate including all allied activities, all complete as per PGCIL specification (Clause 8.0, Technical Specification Section: Civil Works C/ENGG/SPEC/CIVIL Rev No:06), drawing and directions of Engineer-in-charge. (Rate shall be inclusive of all items like pipes, rollers, painting, RCC, etc.) (Cement to be supplied by BHEL free of cost)	No	1		

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
29	Providing antiweed treatment and stone spreading including all allied activities all complete as per PGCIL specification except PCC 1:5:10 (Clause 4.0, Technical Specification Section: Civil Works C/ENGG/SPEC/CIVIL Rev No:06) and directions of Engineer-in-charge.(Rate shall be inclusive of all items like deweeding, preparation of subgrade, cement slurry of mix 1:6 and 100mm uncrushed/crushed/broken stone, etc.) (Cement to be supplied by BHEL free of cost)	sqm	14,250		
30	Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 brick aggregate) as per specification. (Cement to be supplied by BHEL free of cost)	sqm	360		
31	Removal & respreading of stone(gravel) after cleaning & washing all complete as per directions of Engineer-in-charge.	sqm	850		
32	Earth work in excavation over areas (Exceeding 30 cms in depth, 1.5 m in width as well as 10 sq mtrs on the plan) including disposal of the excavated earth, lead upto 100 m and lift upto 3.5 m, disposed earth to be levelled and neatly dressed:				
a	Ordinary Rock	cum	500		
b	Hard Rock (Requiring blasing)	cum	2,000		
c	Hard Rock (Blasing Prohibited)	cum	1,000		
33	Earthwork in excavation in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift upto 3.5m, including getting out the excavated soil and disposal of surplus excated soil as directed, within a lead of 50m.				
(a)	Ordinary Rock	cum	200		
(b)	Hard Rock (Requiring blasing)	cum	500		
©	Hard Rock (Blasing Prohibited)	cum	100		
34	Backfilling with imported good earth.	cum	3,000		
	Total Amount (Rs.)				
	Note:				
	Cement & Reinforcement steel shall be supplied by BHEL free of cost as per norms indicated in conditions of contract.				