

**BILL OF QUANTITY CUM PRICE SCHEDULE**

Name of Project: 765/400kV Sub-Station at Jeerat (West Bengal)

Name of Work: Balance Civil Works for 765/400kV Switchyard &amp; Buildings at Jeerat in West Bengal

SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
1(a)	Earthwork in excavation in foundation 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 for rain water/subsoil seepage water and disposal of excavated earth upto 100m and lift upto 3.6m, disposed earth to be levelled and neatly dressed. (Note: Item Covers Excavation for all type of open foundation including excavation required for Pile Caps etc.) - All kinds of soil.	11900	cum	125.95	1498805.00
1(b)	Earthwork in excavation in foundation 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 for rain water/subsoil seepage water and disposal of excavated earth upto 100m and lift upto 3.6m, disposed earth to be levelled and neatly dressed. (Note: Item Covers Excavation for all type of open foundation including excavation required for Pile Caps etc.) - Ordinary rock.	800	cum	221.05	176840.00
1(c)	Earthwork in excavation in foundation 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 for rain water/subsoil seepage water and disposal of excavated earth upto 100m and lift upto 3.6m, disposed earth to be levelled and neatly dressed. (Note: Item Covers Excavation for all type of open foundation including excavation required for Pile Caps etc.) - Hard rock(requiring blasting)	100	cum	389.80	38980.00
1(d)	Earthwork in excavation in foundation 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 for rain water/subsoil seepage water and disposal of excavated earth upto 100m and lift upto 3.6m, disposed earth to be levelled and neatly dressed. (Note: Item Covers Excavation for all type of open foundation including excavation required for Pile Caps etc.) - Hard rock( blasting prohibited)	100	cum	619.80	61980.00
2(a)	Earthwork in excavation in foundation, trenches or drains by Mechanical Means (Hydraulic Excavator)/ Manual Means over areas (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 3.6m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 100m. - All kinds of soil.	1500	cum	166.40	249600.00
2(b)	Earthwork in excavation in foundation, trenches or drains by Mechanical Means (Hydraulic Excavator)/ Manual Means over areas (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 3.6m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 100m. - Ordinary rock.	200	cum	275.83	55166.00
2(c)	Earthwork in excavation in foundation, trenches or drains by Mechanical Means (Hydraulic Excavator)/ Manual Means over areas (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 3.6m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 100m. - Hard rock(requiring blasting)	100	cum	460.19	46019.00
2(d)	Earthwork in excavation in foundation, trenches or drains by Mechanical Means (Hydraulic Excavator)/ Manual Means over areas (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 3.6m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 100m. - Hard rock( blasting prohibited)	100	cum	656.70	65670.00
3(a)	Extra on Item No. 1 & 2 for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials. - All kinds of soil.	3500	cum	51.75	181125.00
3(b)	Extra on Item No. 1 & 2 for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials. - Ordinary or hard rock.	100	cum	92.80	9280.00

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SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
4.1	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. - All kinds of soil - Pipes, cables etc, not exceeding 80mm dia.	10	RM	138.05	1380.50
4.2	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. - All kinds of soil - Pipes, cables etc. exceeding 80mm dia. but not - exceeding 300 mm dia.	10	RM	225.45	2254.50
4.3	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. -Pipes, cables etc. exceeding 300mm dia but - not exceeding 600mm	10	RM	352.00	3520.00
5	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 3.6m.	10000	cum	125.75	1257500.00
6	Supplying and filling in plinth & foundation with Jamuna/local sand as per drawing under floors, foundation, drain, cable trench etc including watering, ramming, consolidating and dressing etc all complete.	200	cum	810.82	162164.00
7	Supplying, filling and compacting CNS materials as per IS: 9451 at the site under floors, foundations, roads, cable trenches, drains, etc. including royalty, carriage etc. all complete, for all leads and lift with all labour, material, tools, tackles, equipments, safeguards & incidentals as necessary as per specification and direction - of - Engineer -in- charge.	1100	cum	332.55	365805.00
8	Supplying, filling and compacting stone boulders, hard core of stone ballast etc mixed with sand at the site under floors, foundations, roads, cable trenches, drains, etc. in layers not exceeding 200mm thickness including royalty, carriage etc. all complete, for all leads and lift with all labour, material, tools, tackles, equipments, safeguards & incidentals as necessary as per specification and direction - of - Engineer -in- charge.	100	cum	1645.41	164541.00
9(a)	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 -. - Lead upto 1 km.	4500	cum	98.34	442530.00
9(b)	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 -. - Lead from 1Km to 2 km.	1200	cum	111.50	133800.00
9(c)	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 -. - Lead from 2Km to 3 km.	200	cum	124.51	24902.00
9(d)	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 -. - Lead from 3Km to 4 km.	100	cum	137.01	13701.00
9(e)	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 -. - Lead from 4Km to 5 km.	100	cum	149.17	14917.00

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SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
10(a)	Supplying chemical emulsion in sealed containers including delivery as specified. - Chlorpyrifos emulsifiable concentrate of 20%	40	litre	157.45	6298.00
11(a)	Diluting and injecting chemical emulsion for POST-CONSTRUCTIONAL anti- termite treatment (excluding the cost of chemical emulsion) : - Along external wall where the apron is not provided using chemical emulsion @ 7.5 litres / sqm of the vertical surface of the substructure to a depth of 300 mm including excavation channel along the wall & rodding etc. complete: - With Chlorpyrifos/ Lindane E.C. 20% with 1% concentration.	50	RM	16.80	840.00
11(b)	Diluting and injecting chemical emulsion for POST-CONSTRUCTIONAL anti- termite treatment (excluding the cost of chemical emulsion) : - Along the external wall below concrete or masonry apron using chemical emulsion @ 2.25 litres per linear metre including drilling and plugging holes etc. - With Chlorpyrifos/ Lindane E.C. 20% with 1% concentration.	50	RM	24.30	1215.00
11(c)	Diluting and injecting chemical emulsion for POST-CONSTRUCTIONAL anti- termite treatment (excluding the cost of chemical emulsion) : - Treatment of soil under existing floors using chemical emulsion @ one litre per hole, 300 mm apart including drilling 12 mm diameter holes and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing floor : - With Chlorpyrifos/Lindane E.C. 20% with 1% concentration.	93	Sqm	131.90	12266.70
11(d)	Diluting and injecting chemical emulsion for POST-CONSTRUCTIONAL anti- termite treatment (excluding the cost of chemical emulsion) : -Treatment of existing masonry using chemical emulsion @ one litre per hole at 300 mm interval including drilling holes at 45 degree and plugging them with cement mortar 1:2 (1 cement : 2 coarse sand) to the full depth of the hole : - With Chlorpyrifos/Lindane E.C. 20% with 1% concentration.	40	RM	19.05	762.00
11(e)	Diluting and injecting chemical emulsion for POST-CONSTRUCTIONAL anti- termite treatment (excluding the cost of chemical emulsion) : - Treatment at points of contact of wood work by chemical emulsion Chlorpyrifos/ Lindane (in oil or kerosene based solution) @ 0.5 litres per hole by drilling 6 mm dia holes at downward angle of 45 degree at 150 mm centre to centre and sealing the same.	5	RM	165.48	827.40
12	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).	50	Sqm	131.90	6595.00
13	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).	9	Sqm	293.35	2640.15
14	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.	10	Sqm	88.05	880.50
15	Extra for providing and mixing water proofing material in Cement Concrete work in doses by weight of cement as per manufacturer's specification.	3600	per 50 kg cement	41.73	150228.00
16(a)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering: - 1:4:8 (1 cement : 4 fine sand : 8 graded stone aggregate 40 mm nominal size)	1000	cum	3919.79	3919790.00
16(b)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering: - 1:3:6 (1 cement : 3 fine sand : 6 graded stone aggregate 40 mm nominal size)	50	cum	4313.52	215676.00
16(c)	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering: - 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	200	cum	4943.80	988760.00
17(a)	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level : - 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	100	cum	5570.21	557021.00

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SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
18	Providing & fixing in position M25 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. (Note:- 1. Cement content considered in M-25 is @330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately.)	20	cum	6160.32	123206.40
19	Providing and laying reinforced CC road/ pavement of design mix M-25 grade with readymixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator, vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per customer's technical specifications and directions of Engineer-in-charge excluding the cost of panel shuttering and reinforcement steel but including the cost of admixtures in recommended proportions (as per IS 9103) to accelerate, retard setting of concrete, improve workability without impairing strength and durability. (Note:- cement content considered in this item is 330kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately).	270	cum	6353.11	1715339.70
20	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/grouting compound and shall be of strength not less than M30 including placing, curing, cleaning, surface preparation, testing, etc. complete with labour, materials, equipment, handling, testing, etc. all complete as per specifications, drawings and instructions of the Engineer.	20	cum	7320.67	146413.43
21(i.)	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for RCC work including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement including admixtures in recommended proportions (as per IS 9103) to accelerate, retard setting of concrete, improve workability without impairing strength and durability. - M25 grade. (Note:- 1. Cement content considered in M-25 is @330 kg/cum. Excess/Less Cement used as per design mix is payable/Recoverable separately. 2. For the purpose of measurement, plinth level for RCC Work is defined as Working ground level +1.2M.)- All works up to plinth level	2800	cum	5887.43	16484804.00
21(ii.)	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for RCC work including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement including admixtures in recommended proportions (as per IS 9103) to accelerate, retard setting of concrete, improve workability without impairing strength and durability. - M25 grade. (Note:- 1. Cement content considered in M-25 is @330 kg/cum. Excess/Less Cement used as per design mix is payable/Recoverable separately. 2. For the purpose of measurement, plinth level for RCC Work is defined as Working ground level +1.2M.) - All works above plinth level to floor V level	400	cum	6691.00	2676400.00
22	Add/deduct for using extra cement in the items of design mix over and above the specified cement content therein.	2400	Quintal	533.82	1281168.00
23(a)	Centering and shuttering including strutting, propping etc. and removal of form for : Foundations, footings, bases of columns, etc. for mass concrete. - Foundations, footings, bases of columns, etc. for mass concrete.	4600	Sqm	184.42	848332.00
23(b)	Centering and shuttering including strutting, propping etc. and removal of form for : Foundations, footings, bases of columns, etc. for mass concrete. - Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	2300	Sqm	369.24	849252.00
23(c)	Centering and shuttering including strutting, propping etc. and removal of form for : Foundations, footings, bases of columns, etc. for mass concrete. - Suspended floors, roofs, landings, balconies and access platform.	200	Sqm	413.62	82724.00

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23(d)	Centering and shuttering including strutting, propping etc. and removal of form for : Foundations, footings, bases of columns, etc. for mass concrete. - Lintels, beams, plinth beams, girders, bressumers, chajjas and cantilevers.	200	Sqm	333.17	66634.00
23(e)	Centering and shuttering including strutting, propping etc. and removal of form for : Foundations, footings, bases of columns, etc. for mass concrete. - Columns, Pillars, Piers, Abutments, Posts and Struts.	6600	Sqm	454.41	2999106.00
23(f)	Centering and shuttering including strutting, propping etc. and removal of form for : Foundations, footings, bases of columns, etc. for mass concrete. - Stairs excluding landings	40	Sqm	391.50	15660.00
24(i.)	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.	10	Sqm	169.97	1699.70
25(a)	Steel reinforcement of grade Fe-500/500D TMT bars - Including supply (To be procured from SAIL/TISCO/RINL/IISCO or Powergrid approved source) and straightening, cutting,bending, binding, (i/c cost of binding wire), placing in position, chairs & laps etc. all labour & material complete at all level and heights.	10000	Kg	49.62	496200.00
25(b)	Steel reinforcement of grade Fe-500/500D TMT bars - Excluding supply but including straightening, cutting,bending, binding, (i/c cost of binding wire), placing in position, chairs & laps etc. all labour & material complete at all level and heights. (Note: Rates are also includes Unloading, storage, watch and ward etc for BHEL supplied Reinforcement).	209000	Kg	11.11	2321990.00
26	Structural steel work 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.	16000	Kg	51.36	821760.00
27	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including providing, cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	4000	Kg	60.38	241520.00
28(a)	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. - 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.	2000	Kg	56.66	113320.00
28(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. - In gratings, frames, ladders, stair railings, gates (including pipes), rails, ISMB, ISMC and similar works.	6000	Kg	78.07	468420.00
29	Galvanised steel work for rung ladder, Handrail, 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 primer all complete. (Mass of Zinc Coating= 610 gm/ sqm)	100	Kg	57.58	5757.95
30(i.)	Brick work with common burnt clay F.P.S. bricks as per Technical Specification of class designation 7.5 in foundation and plinth including weep holes: (For the purpose of measurement, plinth level for RCC Work is defined as Working ground level +1.2M) - Cement mortar 1:6 (1 cement : 6 coarse sand)	400	cum	4524.10	1809640.00
31(i.)	Brick work with common burnt clay F.P.S.bricks as per Technical Specification of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes including weep holes : (For the purpose of measurement, plinth level for RCC Work is defined as Working ground level +1.2M) - Cement mortar 1:6 (1 cement : 6 coarse sand)	200	cum	5355.29	1071058.00
32(i.)	Half brick masonry with common burnt clay F.P.S. bricks as per Technical specification of class designation 7.5 in foundations and plinth in. (For the purpose of measurement, plinth level for RCC Work is defined as Working ground level +1.2M) - cement mortar 1:4 (1 cement : 4 coarse sand)	50	Sqm	562.70	28135.00

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33(i.)	Half brick masonry with common burnt clay F.P.S.bricks as per Technical specification of class designation 7.5 in superstructure above plinth level up to floor V level. (For the purpose of measurement, plinth level for RCC Work is defined as Working ground level +1.2M) - Cement mortar 1:4 (1 cement :4 coarse sand)	50	Sqm	653.36	32668.00
34	Extra for providing and placing in position 2 Nos. 6mm dia. M.S. bars at every third course of half brick masonry.	100	Sqm	48.21	4821.00
35(i.)	6mm cement plaster to ceiling of mix - 1:3 (1 cement : 3 fine sand)	200	Sqm	138.39	27678.00
36(i.)	12mm cement plaster on the wall/ concrete surface in the mix: - 1:6 (1 cement: 6 fine sand)	2500	Sqm	154.72	386800.00
37(i.)	12mm cement plaster finished with a floating coat of neat cement in the mix: - 1:4 (1cement :4 fine sand)	400	Sqm	203.19	81276.00
38(i.)	15 mm cement plaster on the rough side of single or half brick wall of mix : - 1:6 (1 cement: 6 fine sand)	50	Sqm	178.47	8923.50
39	18mm cement plaster on roof in two coats with under layer 12mm thick cement plaster 1:5 (1 cement :5 coarse sand ) finished with a top layer of 6mm thick 1:6 cement plaster(1cement : 6 fine sand)	300	Sqm	245.49	73647.00
40	18mm cement plaster on roof in two coats with under layer 12mm thick cement plaster 1:5 (1 cement :5 coarse sand ) finished with a top layer of 6mm thick 1:3 cement plaster(1cement : 3 coarse sand)	10	Sqm	259.23	2592.30
41	Extra for providing and mixing water proofing material in cement plaster work in proportion recommended by the manufacturer	10	Per bag of 50 KG cement used in mix	44.12	441.20
42	Neat cement punning	50	Sqm	39.55	1977.50
43	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.	100	RM	34.15	3415.00
44(a)	Forming groove of uniform size in the top layer of plaster as per approved pattern using wooden battens, nailed to the under layer, including removal of wooden battens, repair to the edges of panels and finishing the groove complete as per specifications and direction of the Engineer-in-charge at all level & height: - 25 mm wide and 25 mm deep groove	10	RM	34.63	346.30
45	Making plinth protection of 50mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) laid over 75mm thick bed of dry brick balast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth.	100	Sqm	426.82	42682.00
46	Providing and laying 75 mm thick compacted bed of dry brick aggregate of 40 mm thick nominal size including spreading,well ramming, consolidating and grouting with jamuna sand, including finishing smooth etc. complete as per direction of Engineer-in-charge.	10	Sqm	136.33	1363.30
47	Providing an fixing chicken wire mesh on wall, floor & ceiling surface all complete as per drawing/specification and direction of Engineer-in charge.	325	Sqm	40.89	13289.25
48	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.	80	RM	63.35	5068.00
49(a)	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. - 50mm thick with 12.5mm nominal size stone aggregate.	10	Sqm	335.25	3352.50
50	62 mm thick cement concrete flooring with concrete hardener topping, under layer 50 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) and top layer12mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate, 6mm nominal size) by volume, hardening compound mixed @ 2 litre per 50kg of cement or as per manufactures specifications. This includes cost of cement slurry, but excluding the cost of nosing of steps etc. complete.	10	Sqm	565.28	5652.80

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51	52 mm thick CC flooring with "Hardcrete" concrete hardner topping under layer 40 mm thick CC 1:2:4 (1 cement: 2 coarse sand: 4 graded 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 Hardcrete hardening compound of approved quality is mixed @ 2 liter Hardcrete hardener per 50 Kg of cement including cement slurry or as per manufacturer's specifications. This includes the cost of cement slurry, but excluding the cost of nosing of steps etc., complete.	10	Sqm	516.84	5168.40
52(i.)	Providing and fixing glass strips in joints of terrazo/ cement concrete floors - 40 mm wide and 4 mm thick	80	RM	48.59	3887.20
53(i.)	Cement plaster skirting (up to 30 cm height) with cement mortar 1:3 (1 cement : 3 coarse sand) finished with metallic concrete hardner in a same ratio as floor finished with a floating coat of neat cement. - 21 mm thick	10	Sqm	328.96	3289.60
54(i.)	Kota stone flooring, skirting and riser over 20mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match shade of the slab, including rubbing and polishing complete with base of cement mortar 1: 4 (1 cement : 4 coarse sand): - Minimum 25 mm thick	20	Sqm	1111.54	22230.80
55(i.)	Providing and laying polished vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and conforming to IS: 15622 of approved make in all colours and shades laid over 20mm thick cement mortar 1:4 (1 Cement:4 coarse sand) and jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. complete as per direction of Engineer-in charge. - Size of tile 60 x 60 cm	10	Sqm	990.82	9908.20
56(i.)	Providing and fixing approved quality polished vitrified tiles (thickness to be specified by the manufacturer) of approved make and colours in skirting,risers of steps and dados over 12 mm thick bed of Cement mortar 1:3 (1 Cement:3 coarse sand ) and jointing with grey cement slurry @3.3 kg/sqm including pointing in white cement mixed with pigment of matching shade complete. - Size of tile 60 x 60 cm	10	Sqm	1010.07	10100.70
57	Providing and fixing 1st quality ceramic glazed tiles conforming to IS:15622 (thickness to be specified by manufacture) of approved make in all colours (shades as approved by Engineer-in-Charge) in skirting, risers of steps and dados upto ceiling on wall over 12 mm thick bed of Cement mortar 1:3 (1 Cement:3 coarse sand ) and jointing with grey cement slurry @3.3 kg/sqm including pointing in white cement mixed with pigment of matching shade complete.	10	Sqm	676.81	6768.10
58	Providing and laying 1st quality ceramic glazed floor tiles 300X300 mm (thickness to be specified by manufacturer ) conforming to IS:15622 of approved make in colours as approved by Engineer in Charge laid on 20mm mm thick bed of cement mortar 1:4 ( 1 cement : 4 coarse sand) including pointing the joints with grey cement slurry @3.3kg/ sqm including pointing the joints with white cement mixed with pigment of matching shade complete.	10	Sqm	616.92	6169.20
59	Providing and laying pressed clay tile (Mangalore tile), as per approved pattern, of 20mm nominal thickness of approved size on roofs jointed with cement mortar 1:4 (1 cement : 4 coarse sand) mixed with 2% integral water proofing compound, laid over a bed of 20mm thick cement mortar 1:4 (1 cement: 4 coarse sand) and finished neat, all complete as per direction of Engineer-in-Charge.	5	Sqm	387.69	1938.45
60(i)	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building, all complete as per the architectural drawings, with 18 mm thick stone slab over 20 mm average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand), laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade, including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge. - Polished Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.	5	Sqm	2560.03	12800.15

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Name of Project: 765/400kV Sub-Station at Jeerat (West Bengal)

Name of Work: Balance Civil Works for 765/400kV Switchyard &amp; Buildings at Jeerat in West Bengal

SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
61	Providing and laying polished Granite stone 18-20mm thk in skirting and dado with 6mm thick projection from adjacent plaster including mortar ,cement slurry ,pigments, curing, grinding,moulding, granite polishing etc. all complete.	5	Sqm	3010.10	15050.50
62(i.)	Providing and fixing min. 20mm thick mirror polished, premoulded and prepolished, machine cut for column facia, kitchen platforms, vanity counters, window sills, facia 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 and sizes - Granite black or customer approved color	5	Sqm	2762.11	13810.55
63(i.)	Providing and fixing min. 20mm thick mirror polished, premoulded and prepolished, machine cut for column facia, kitchen platforms, vanity counters, window sills, facia 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 and sizes - Rajnagar plain white marble/udaipur green marble/zebra black marble	5	Sqm	1704.78	8523.90
64(a)	Providing and fixing machine cut stone slab with table rubbed, edges/exposed corners rounded and polished on both side, of size 610x1150mm deep and min. 20 mm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size)as per direction of Engineer-in-charge and finished smooth. - Best Quality Marble/Udaipur green marble/Zebra Black Marble	5	Sqm	1619.15	8095.75
64(b)	Providing and fixing machine cut stone slab with table rubbed, edges/exposed corners rounded and polished on both side, of size 610x1150mm deep and min. 20 mm thick, fixed in urinal partitions by cutting a chase of appropriate width with chase cutter and embedding the stone in the chase with epoxy grout or with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size)as per direction of Engineer-in-charge and finished smooth. - Granite Stone of approved shade.	5	Sqm	1827.60	9138.00
65	Wall lining butch work upto 10m height with DHOLPUR stone 40 mm thick rough facing on the exposed surface with stone strips of minimum length 300 mm and required width, including embedding every tenth layer and bottom most layer in masonry or concrete after making necessary chases of size 75x75 mm and by providing layer of 75 mm thick strips i/c 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand) i/c ruled pointing in cement mortar 1:2 (1 white cement: 2 stone dust) with an admixture of pigment to match the shade of stone complete as per direction of Engineer-in-charge.	5	Sqm	1536.18	7680.90
66	Providing and applying <b>white cement based putty</b> of average thickness 1mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth as directed by engineer-in-charge for all level and height.	200	Sqm	82.18	16436.00
67	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete at all level and height	125	Sqm	117.08	14635.00
68(a)	Applying priming coat - With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works.	1000	Sqm	15.19	15190.00
68(b)	Applying priming coat - Applying one coat of water thinnable cement primer of approved brand and manufacture on RCC/ wall surface at all level and height:	200	Sqm	36.27	7254.00
69(i.)	Finishing RCC/walls with water proofing cement paint of gray color/ approved color by customer at all levels and heights: - New work (Two or more coats applied @ 3.84 kg/10 sqm).	940	Sqm	56.21	52837.40
70(a)	Painting with black anti-corrosive bitumastic paint of approved brand and manufacture to give an even shade: - Two or more coats on new work	300	Sqm	63.50	19050.00



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SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
71(a)	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade: - Two or more coats on new work of approved brand and manufacture	100	Sqm	74.91	7491.00
72	Painting of all steel works used for grating and supports in transformer/ reactor foundations with epoxy paint (Two or more coat) including epoxy based zinc phosphate primer (two packs) conforming to IS: 13238- 1991 as per manufacturer's specifications including preparation of surface..	300	Sqm	116.30	34890.00
73(a)	Wall/ Ceiling painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound ) content less than 50 grams/ litre. of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour at all level and height. - Two or more coats on new work	200	Sqm	68.74	13748.00
74(a)	Distemping with oil bound washable distemper of approved brand and manufacture to give an even shade at all level and height - New work (two or more coats) over and including priming coat with cement primer.(Work to be carried as per relevant IS codes.)	370	Sqm	91.81	33969.70
75(a)	Distemping with first quality acrylic washable distemper (ready mixed) of approved manufacturer and of required shade and colour complete as per manufacturer's specification at all level and height - New work (two or more coats) over and including priming coat with cement primer.(Work to be carried as per relevant IS codes.)	10	Sqm	51.95	519.50
76	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade at all level and height. - Two or more coats on new work.	10	Sqm	52.63	526.30
77	Painting with acid proof paint of approved brand and manufacture of required colour to give an even shade at all level and height. - Two or more coats on new work.	10	Sqm	52.95	529.50
78	White washing with lime to give an even shade: - Three or more coats on new work.	10	Sqm	16.97	169.70
79(a)	Finishing walls/ Slab with Premium Acrylic Smooth exterior paint with Silicone additives of required shade at all level and height: - New work : (Two or more coat applied @ 1.43 ltr/10 sqm over and including primer coat of exterior primer applied @ 2.20 kg/10 sqm).	125	Sqm	89.57	11196.25
80	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 .	10	Sqm	395.72	3957.20
81(a)	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded builtup standard tubular and other sections of approved make conforming to IS: 733 and IS:1285, fixed with rawl plugs and screws or with fixing clips or with expansion hold fasteners including necessary filling up of gaps at junctions at top , bottom and sides with required PVC/neoprene felt, etc. Aluminium sections shall be smooth , rust free, straight, mitred and jointed mechanically wherever required including cleat angle, aluminium snap beading for glazing/panelling, CP brass/stainless steel screws, all complete as per architectural drawings and direction of Engineer-in-charge. (Glazing and panelling to be paid for separately). - For Fixed Portion - Powder coated aluminium (minimum thickness of powder coating 50 micron)	100	Kg	334.55	33455.00

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SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
81(b)	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded builtup standard tubular and other sections of approved make conforming to IS: 733 and IS:1285, fixed with rawl plugs and screws or with fixing clips or with expansion hold fasteners including necessary filling up of gaps at junctions at top, bottom and sides with required PVC/neoprene felt, etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, aluminium snap beading for glazing/panelling, CP brass/stainless steel screws, all complete as per architectural drawings and direction of Engineer-in-charge. (Glazing and panelling to be paid for separately). -For shutters of doors, windows & ventilators including providing and fixing hinges/pivots and fittings wherever required including the cost of PVC/neoprene gasket required. - Powder coated aluminium (minimum thickness of powder coating 50 micron)	50	Kg	391.32	19566.00
82(a)	Providing and fixing 12mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS:12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of Engineer-In-charge. - Pre-laminated particle board with decorative lamination on one side and balancing lamination on other sides.	5	Sqm	720.98	3604.90
82(b)	Providing and fixing 12mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS:12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of Engineer-In-charge. - Pre-laminated particle board with decorative lamination on both sides.	5	Sqm	755.05	3775.25
83(a)	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 float glass panes of 4.0 mm thickness	10	Sqm	664.04	6640.40
83(b)	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 float glass panes of 5.5mm (minimum) thickness (weight not less than 13.75kg/sqm)	10	Sqm	886.51	8865.10
83(c)	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 5.5mm (minimum) thick toughened reflective glass	5	Sqm	1502.70	7513.50
83(d)	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 8mm thick toughened reflective glass	5	Sqm	1891.80	9459.01
83(e)	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 10mm thick toughened reflective glass	5	Sqm	2279.89	11399.43
83(f)	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 12mm thick toughened reflective glass	5	Sqm	2667.97	13339.85
84	Providing and fixing Aluminum grills of required pattern in frames of windows etc. with Aluminium flats, square or round bars etc. all complete. (Only weight of grills to be measured for payment).	90	kg	355.37	31983.30

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SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
85	Providing and fixing 12 mm thick frameless glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc. to be paid separately).	10	Sqm	4002.24	40022.40
86(a)	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS 6315 marked "hardwyn" make (Model 3000) or equivalent for doors including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece M. S. sheet outer box with slide plate etc. complete as per direction of Engineer-in-charge. - With Stainless steel cover plate	5	Each	1777.08	8885.40
87	Providing and fixing double action hydraulic floor spring of DORMA BTS 80 for doors including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece M. S. sheet outer box with slide plate etc. complete as per direction of Engineer-in-charge. - With Stainless steel cover plate	5	Each	1777.08	8885.40
88	Providing and fixing chromium plated brass 100 mm mortice latch and lock with 6 levers and a pair of lever handles with necessary screws etc. complete (best make of approved quality).	5	Each	590.20	2951.00
89	Providing and fixing bright finished 100mm mortice lock with 6 levers without pair of handles for aluminium door with necessary screws etc complete (Best make of approved quality) as per direction of Engineer-in-charge.	5	Each	413.08	2065.40
90(a)	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 16 mm	5	Each	184.35	921.75
90(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. - 150 X 10mm	5	Each	55.22	276.10
91(a)	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	5	Each	43.86	219.30
91(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. - 100mm	5	Each	38.77	193.85
92	Providing and fixing IS:3564 marked aluminium die cast body tubular type universal hydraulic door closer of approved quality and make with accessories and screws complete.	5	Each	358.96	1794.80
93	Providing and fixing aluminium hanging floor door stopper ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade with necessary screws etc. complete.	5	Each	23.68	118.40
94	Providing and fixing circular / hexagonal cast iron or M.S. sheet box for ceiling fan clamp of internal dia 140 mm, 73 mm height, 3 mm thick rim, top and bottom lid of 1.5 mm M.S. sheet. Top surface of top lid hacked for proper bonding, top lid shall be screwed in to cast iron or M.S. box by means of 3.3 mm round headed screws, one lock at the corners. Clamps shall be made of 12 mm dia M.S. bar bend to shape as per standard drawing with overall length as 80 cm.	5	Each	115.08	575.40
95	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 etc as per T.S. (In case, area of rolling shutters exceeds 10 sqm, mechanical device chain and crank operation for operating shutters shall be provided and its cost shall be deemed to be included in the quoted price). - 80 X 1.25mm MS laths with 1.25mm thick top cover.	10	Sqm	2019.89	20198.90
96	Providing and fixing ball bearing for rolling shutters.	2	Each	329.39	658.78
97	Extra for providing mechanical device chain and crank operation for operating shutters. - Exceeding 10.00 sqm and upto 16.80 sqm in area.	5	Sqm	617.14	3085.70

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SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
98	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	5	RM	318.17	1590.85
99	Providing and fixing 2 mm thick M.S. sheet door with frame of 45x45x5 mm angle iron and 3 mm M.S. gussets plates at the junction and corners, all necessary fittings complete, including applying a priming coat of approved steel primer. - Using M.S. Angle 45x45x5 mm for diagonal braces	5	Sqm	2662.05	13310.25
100	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including applying a priming coat of approved steel primer all complete. - Fixed to openings/ woodeden frames with rawl plugs screws etc.	5	kg	104.57	522.85
101	Providing and fixing factory made ISI marked steel glazed doors, windows and ventilators, side/top/centre hung, with beading and all members such as F7D, F4B, K11B and K12B etc. complete of standard rolled steel sections, joints mitred and flash butt welded and sash bars tenoned and riveted, including providing and fixing of hinges, pivots, including priming coat of approved steel primer, but excluding the cost of other fittings, complete all as per approved design, (sectional weight of only steel members shall be measured for payment). - Fixing with 15x3 mm lugs 10 cm long embedded in cement concrete block block 15x10x10 cm of C.C.	5	kg	104.76	523.80
102	Providing and fixing ISI marked flush door shutters decorative type, core of block board construction with frame of 1st 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.	5	Sqm	2148.42	10742.10
103	Providing and fixing single or double steel door shutters with 45mm thk flush design shutter comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 18 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete as per Drawing No. C/ENGG/STD/FFPH/2016/5 OF 16, R-0.	5	Sqm	5364.44	26822.21
104	Providing and fixing fire proof steel doors (single or double shutter) with panic devices shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers including all fittings, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.	5	Sqm	8583.30	42916.49
105	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm ( + 0.05 %), total coated thickness with zinc coating 120 gm per sqm as per IS:277 in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	200	Sqm	473.40	94680.00

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SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
106	Providing corrugated G.S. sheet of 0.8mm thick with zinc coating not less than 275 gm/sqm including vertical/curved surface fixed with polymer coated G, I, J or L hooks, bolts and nuts 8 mm diameter G, I Plain, bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (up to any pitch in horizontal/ vertical or curved surfaces), excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	200	sqm	709.50	141900.00
107(a)	Providing and fixing soil, waste and vent pipes Min. 100mm dia: - Sand cast iron S & S pipe.	1	RM	738.92	738.92
108(a)	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 testing of joints etc. complete. - 100 mm diameter.	5	RM	197.68	988.40
108(b)	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 testing of joints etc. complete. - 150 mm diameter.	5	RM	296.56	1482.80
108(c)	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 testing of joints etc. complete. - 200 mm diameter.	5	RM	381.34	1906.70
109(a)	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 including all fittings like bends, bat clamps gratings etc. - 110 mm diameter	20	RM	211.92	4238.40
110(a)	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for 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 Single socketed pipes. - 110 mm bend 87.5 degree	5	Each	99.94	499.70
110(b)	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for 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 Single socketed pipes. - 110 shoe plain	5	Each	87.15	435.75
111(a)	Providing and fixing on wall face unplasticised - PVC clips of approved design to unplasticised - Rigid PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with MS screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement: 4 coarse sand) and making good the wall etc complete. - 110 mm	5	Each	175.15	875.75
112(a)	Providing precast cement concrete Jali 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 6 mm nominal size), reinforced with 1.6 mm dia mild steel wire, including centering and shuttering, roughening cleaning, fixing and finishing in cement mortar 1:3 (1 cement: 3 fine sand) etc. complete, excluding plastering of jambs, sills and soffits. - 50 mm thick	5	sqm	801.57	4007.85
113(a)	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 100mm dia pipe	5	Each	163.27	816.35
114(a)	Providing lead caulked joints to SCI pipes and fittings of diameter - 100mm	5	Each	284.88	1424.40
115(a)	Providing and fixing SCI trap of self cleansing design with SCI 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. - Sand Cast Iron S & S as per IS:3989	5	Each	956.92	4784.60
116	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.	10	Each	178.17	1781.70

**BILL OF QUANTITY CUM PRICE SCHEDULE**

Name of Project: 765/400kV Sub-Station at Jeerat (West Bengal)

Name of Work: Balance Civil Works for 765/400kV Switchyard &amp; Buildings at Jeerat in West Bengal

SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
117(a)	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 a slurry coat of neat cement 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 115mm 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 waterproofing 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 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge. d) Finishing 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 above operations to be done in order and as directed and specified by the Engineer-in-Charge : - With average thickness of 120mm and minimum thickness at khurra as 65 mm.	10	Sqm	954.20	9542.00
118	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.	4500	sqm	90.10	405450.00
119	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	4500	cum	10.70	48150.00
120	Providing, Laying, Spreading and compacting graded Stone aggregate (Size Range 53mm to 0.075mm) to wet mix macadam (WMM) specification including premixing the material with water at OMC in for all leads & lifts, laying in uniform layers with mechanical paver finisher in sub-base/ base course on well prepared surface and compacting with vibratory roller of 8 to 10 tonne capacity to achieve the desired density, complete including supply of all material, labour, T&P etc as per specification and direction of Engineer-In-Charge.	300	cum	2048.22	614466.00
121(a)	Suppling and stacking at site - 90 mm to 45 mm size stone aggregate	250	cum	1278.69	319672.50
121(b)	Suppling and stacking at site - 63 mm to 45 mm size stone aggregate	200	cum	1386.53	277306.00
121(c)	Suppling and stacking at site - 53 mm to 22.5 mm size stone aggregate	200	cum	1475.02	295004.00
121(d)	Suppling and stacking at site - Stone screening 13.2 mm nominal size (type A)	100	cum	1439.66	143966.00
121(e)	Suppling and stacking at site - Stone screening 11.2 mm nominal size (type B)	50	cum	1398.19	69909.50
121(f)	Suppling and stacking at site - moorum	50	cum	563.01	28150.50
122(a)	Laying, spreading and compacting stone aggregates of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3-wheeled road / vibratory roller 8-10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening/ binding materials to fill up interstices of coarse aggregate, watering and compacting to the required density etc., all complete. (Payment will be made for compacted layers only. Stone aggregates, screenings & moorum to be paid separately.). - Subbase with stone aggregate 90mm to 45mm including stone screening 13.2mm size and moorum/blinding material.	400	cum	449.10	179640.00

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SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
122(b)	Laying, spreading and compacting stone aggregates of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3-wheeled road / vibratory roller 8-10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening/ binding materials to fill up interstices of coarse aggregate, watering and compacting to the required density etc., all complete. (Payment will be made for compacted layers only. Stone aggregates, screenings & moorum to be paid separately.). - Base course with stone aggregate 63mm to 45mm including stone screening 13.2mm size and moorum/blinding material.	400	cum	449.10	179640.00
122(c)	Laying, spreading and compacting stone aggregates of specified sizes to WBM specifications in uniform thickness, hand picking, rolling with 3-wheeled road / vibratory roller 8-10 tonne capacity in stages to proper grade and camber, applying and brooming requisite type of screening/ binding materials to fill up interstices of coarse aggregate, watering and compacting to the required density etc., all complete. (Payment will be made for compacted layers only. Stone aggregates, screenings & moorum to be paid separately.). - Base course with stone aggregate 53mm to 22.4 mm including stone screening 11.2mm size and moorum/blinding material.	400	cum	449.10	179640.00
123	Providing and placing in position dowel bar, 16mm dia MS Rod including PVC pipe in Expansion joint as well as in transverse joint for Road work	10	RM	103.03	1030.28
124(a)	Providing and placing in position suitable PVC water stops conforming to IS 12200 or equivalent for construction/expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete. - Serrated with central bulb (230mm wide, 5mm thick)	10	RM	154.79	1547.90
124(b)	Providing and placing in position suitable PVC water stops conforming to IS 12200 or equivalent for construction/expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete. - Serrated with central bulb (230mm wide, 6mm thick)	20	RM	177.11	3542.20
124(c)	Providing and placing in position suitable PVC water stops conforming to IS 12200 or equivalent for construction/expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete. - Serrated with central bulb (230mm wide, 8-11mm thick)	10	RM	216.54	2165.40
125	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).	75	Cum	4335.95	325196.25
126	Providing and laying 80mm thick factory made cement concrete interlocking paver block of M-40 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 20mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per drawing and the direction of Engineer-in-charge.	1300	Sqm	640.74	832962.00
127	Providing and laying 600mm wide 75mm thk PCC 1:4:8 (1 cement : 4 Fine sand : 8 graded stone aggregate 40mm nominal size) shoulder over well compacted earth on both side of road all complete as per drawing, specification and direction of Engineer-in-charge (Rate shall be inclusive of material, well compacted earth, labour, T & P etc.)	975	Sqm	293.98	286634.64
128	Providing and laying 600mm wide 100mm thk PCC 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) shoulder over well compacted earth on both side of road all complete as per drawing, specification and direction of Engineer-in-charge (Rate shall be inclusive of material, well compacted earth, labour, T & P etc.)	975	Sqm	494.38	482020.50

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SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
129	Providing and fixing in position 12mm thick bitumen impregnated fibre board conforming to IS: 1838, including the cost of primer, sealing compound in expansion joints.	15	per cm depth per 100 m	397.12	5956.80
130	Providing and laying polythene sheet of 125 microns between the PCC and RCC slab in road/ pavement works all complete as per direction of Engineer-in-Charge)	3100	sqm	12.70	39370.00
131	Providing and fixing in position pre moulded joint filler in expansion joints	400	per cm depth per cm width per m length	1.89	756.00
132(a)	Providing and laying in position bitumen hot sealing compound for expansion joints etc. - Using grade A ceiling compound	400	per cm depth per cm width per m length	2.16	864.00
133(a)	Supplying and erection of dewatering pumps at desired location including all cable and pipe connections alongwith auto starter and necessary shed all complete as per customer's specification and instruction of engineer in charge. - 5 HP	1	Nos	36764.31	36764.31
133(b)	Supplying and erection of dewatering pumps at desired location including all cable and pipe connections alongwith auto starter and necessary shed all complete as per customer's specification and instruction of engineer in charge. - 0.5 HP	2	Nos	14889.30	29778.61
134(a)	Providing and fixing in position in culvert/road crossing/building PVC pipes conforming to IS : 12818 including jointing with seal all complete as per drawing and specification. - 150mm diameter	50	RM	211.92	10596.00
135	Supplying & fixing galvanised foundation bolts including nut & washer (Mass of Zinc Coating= 610 gm/ sqm) of all dia & length in position with help of proper templates (to be supplied by contractor) all complete as per drawings & directions of Engr-in-Charge. Weight of the template shall not be measured for payment purpose.	1000	Kg	67.64	67640.00
136	Fixing of foundation bolts in position with help of proper templates (to be supplied by contractor) including nuts and washers all complete as per drawings & directions of Engr-in-Charge. Note: 1.) Weight of the template shall not be measured for payment purpose. 2.) The Dia and Length of BHEL Supplied Foundation bolt may vary upto 80mm & 2.4 metre respectively. 3.) Rates are also includes Unloading, storage, watch and ward etc for BHEL supplied Foundation Bolt.	104000	Kg	9.20	957107.12
137	Providing & fixing <b>galvanised chain link fencing</b> including all allied activities, all complete as per POWERGRID Drawing No. (C/ENGG/CVL/SYD/FENCE/2016/01 of 01) and directions of Engr-in-Charge. (The rate shall be inclusive of all the labour, materials (GI fence, Galvanised Pipe/Galvanised tubular post/galvanised Flat etc), earthwork i.e excavation, backfilling, disposal, brickwork, plaster, cement painting, CC, P.C.C & shuttering and erection etc all complete)	225	RM	3799.95	854987.81
138	Providing and fixing <b>gate</b> made of medium duty MS pipe including all allied activities, all complete as per customer's specification, drawing and direction Engineer in charge. (Rate shall be inclusive of all labour, material items like medium duty pipe, fabrication, welding, primer, painting, Al-drops, GI pipe, fitting and fixture etc.)	3000	KG	78.07	234210.00
139(a)	Providing and laying non-pressure NP2 class (light duty) R.C.C. 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 : - 100 mm dia. R.C.C. pipe	10	RM	286.53	2865.30
139(b)	Providing and laying non-pressure NP2 class (light duty) R.C.C. 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 : - 150 mm dia. R.C.C. pipe	10	RM	315.32	3153.20



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SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
139(c)	Providing and laying non-pressure NP2 class (light duty) R.C.C. 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 : - 200 mm dia. R.C.C. pipe	10	RM	344.11	3441.10
139(d)	Providing and laying non-pressure NP2 class (light duty) R.C.C. 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 : - 250 mm dia. R.C.C. pipe	10	RM	429.98	4299.80
139(e)	Providing and laying non-pressure NP2 class (light duty) R.C.C. 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 : - 300 mm dia. R.C.C. pipe	10	RM	459.59	4595.90
140(a)	Providing and laying Non Pressure NP-3 R.C.C. hume pipe including collars/spigot jointed with stiff mixture of cement mortar of mix 1:2 (1 cement : 2 fine sand) including testing of joints etc all complete as per drawing and specification excluding the cost of concrete, shuttering, reinforcement, brickwork, plaster on brickwork and painting. - 100mm dia	10	RM	616.04	6160.40
140(b)	Providing and laying Non Pressure NP-3 R.C.C. hume pipe including collars/spigot jointed with stiff mixture of cement mortar of mix 1:2 (1 cement : 2 fine sand) including testing of joints etc all complete as per drawing and specification excluding the cost of concrete, shuttering, reinforcement, brickwork, plaster on brickwork and painting. - 150mm dia	10	RM	677.94	6779.40
140(c)	Providing and laying Non Pressure NP-3 R.C.C. hume pipe including collars/spigot jointed with stiff mixture of cement mortar of mix 1:2 (1 cement : 2 fine sand) including testing of joints etc all complete as per drawing and specification excluding the cost of concrete, shuttering, reinforcement, brickwork, plaster on brickwork and painting. - 200mm dia	10	RM	739.84	7398.40
140(d)	Providing and laying Non Pressure NP-3 R.C.C. hume pipe including collars/spigot jointed with stiff mixture of cement mortar of mix 1:2 (1 cement : 2 fine sand) including testing of joints etc all complete as per drawing and specification excluding the cost of concrete, shuttering, reinforcement, brickwork, plaster on brickwork and painting. - 250mm dia	10	RM	924.46	9244.60
140(e)	Providing and laying Non Pressure NP-3 R.C.C. hume pipe including collars/spigot jointed with stiff mixture of cement mortar of mix 1:2 (1 cement : 2 fine sand) including testing of joints etc all complete as per drawing and specification excluding the cost of concrete, shuttering, reinforcement, brickwork, plaster on brickwork and painting. - 300mm dia	10	RM	988.12	9881.20
140(f)	Providing and laying Non Pressure NP-3 R.C.C. hume pipe including collars/spigot jointed with stiff mixture of cement mortar of mix 1:2 (1 cement : 2 fine sand) including testing of joints etc all complete as per drawing and specification excluding the cost of concrete, shuttering, reinforcement, brickwork, plaster on brickwork and painting. - 450mm dia	10	RM	1660.11	16601.10
141	Providing weep holes in RCC including cost of 75mm dia PVC pipes & fixing them in position etc complete as per standard specification	10	RM	135.70	1357.00
142	Providing 20mm thick expansion joint and filling the same with cement mortar of 1:4 cement sand mortar.	10	RM	36.15	361.50
143	R R masonry with CM 1:6 in retaining wall with raised and cut pointing on exposed surface using random rough stone and bond stone including cost of all materials, leads, lift and curing etc complete as per customer drawing and specification For foundation, plinth & super structure.	10	Cum	3929.16	39291.64
144(a)	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge. - Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)	5	Cum	997.05	4985.25
144(b)	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge. - Nominal concrete 1:4:8 or leaner mix (i/c equivalent design mix)	5	Cum	615.15	3075.75
145	Demolishing R.C.C. 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.	5	Cum	1454.55	7272.75

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SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
146	Demolishing cement mortar 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.	5	Cum	842.75	4213.75
147	Supplying and filling stone aggregate (40mm to 60mm size) over grating for transformer/reactor foundation as per specification	10	Cum	1389.23	13892.30
148(a) i.	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. --All types of soil -- - 300 mm dia	10	RM	366.87	3668.70
148(a)ii.	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. --All types of soil -- - 350 mm dia	10	RM	401.27	4012.70
48(a) iii.	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. --All types of soil -- - 400 mm dia	10	RM	513.62	5136.20
148(b) i.	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. --Rocky strata including Boulders -- - 300 mm dia	10	RM	846.76	8467.60
148(b)ii.	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. --Rocky strata including Boulders -- - 350 mm dia	10	RM	886.92	8869.20
48(b) iii.	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer -in-charge, upto 90 metre depth below ground level. --Rocky strata including Boulders -- - 400 mm dia	10	RM	1026.15	10261.50
149( i.)	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC ISI make, 6 Kg/m2 well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings& accessories etc. all complete, for all depths, as per direction of Engineer-in-charge. --100 mm nominal size dia	10	RM	246.39	2463.90
149 (ii)	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC ISI make, 6 Kg/m2 well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings& accessories etc. all complete, for all depths, as per direction of Engineer-in-charge. --150 mm nominal size dia	10	RM	485.53	4855.30
149 (iii.)	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC ISI make, 6 Kg/m2 well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings& accessories etc. all complete, for all depths, as per direction of Engineer-in-charge. --200 mm nominal size dia	10	RM	518.17	5181.70

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150(i.)	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC ISI make, 6 Kg/m <sup>2</sup> with 25mm holes at random spacing of 200mm/ Well screen (RMS) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings& accessories etc. all complete, for all depths, as per direction of Engineer-in-charge. -- 100 mm nominal size dia	10	RM	380.32	3803.20
150(ii.)	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC ISI make, 6 Kg/m <sup>2</sup> with 25mm holes at random spacing of 200mm/ Well screen (RMS) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings& accessories etc. all complete, for all depths, as per direction of Engineer-in-charge. ---150 mm nominal size dia	10	RM	449.15	4491.50
150(iii.)	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC ISI make, 6 Kg/m <sup>2</sup> with 25mm holes at random spacing of 200mm/ Well screen (RMS) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings& accessories etc. all complete, for all depths, as per direction of Engineer-in-charge. ---200 mm nominal size dia	10	RM	696.41	6964.10
151	Supplying, filling, spreading & leveling stone boulders of size 200 mm, in recharge pit/rain water harvesting/borewell, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	5	Cum	797.16	3985.80
152	Supplying, filling, spreading & leveling gravels of size range 5 mm to 20 mm, in the recharge pit/rain water harvesting/borewell, over the existing layer of boulders, in required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	5	Cum	895.49	4477.45
153	Supplying, filling, spreading & leveling coarse sand of size range 1.5 mm to 2 mm in recharge pit, in required thickness over gravel layer, for all leads& lifts, all complete as per direction of Engineer -in-charge.	5	Cum	895.49	4477.45
154	Gravel packing in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer- in-charge.	5	Cum	1125.80	5629.00
155(a)	Providing and fixing GI Pipe including bend and jointing in cable trench crossing, Vent Pipe, Rain water pipe etc ---100mm Dia	10	RM	733.06	7330.58
155(b)	Providing and fixing GI Pipe including bend and jointing in cable trench crossing, Vent Pipe, Rain water pipe etc ---150mm Dia	10	RM	1159.76	11597.60
156 (i.)	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 mild steel screwed and socketed/ plain ended casing pipes of required dia, conforming to IS: 4270, of reputed & approved make, including painted with outside surface with two coats of anticorrosive paint of approved brand and manufacture, including required hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer-in-charge. - --100 mm nominal size dia having minimum wall thickness 5.00 mm	10	RM	765.41	7654.10
156 (ii.)	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 mild steel screwed and socketed/ plain ended casing pipes of required dia, conforming to IS: 4270, of reputed & approved make, including painted with outside surface with two coats of anticorrosive paint of approved brand and manufacture, including required hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer-in-charge. ---150 mm nominal size dia having minimum wall thickness 5.00 mm	10	RM	1034.19	10341.90
156 (iii.)	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 mild steel screwed and socketed/ plain ended casing pipes of required dia, conforming to IS: 4270, of reputed & approved make, including painted with outside surface with two coats of anticorrosive paint of approved brand and manufacture, including required hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer-in-charge. ---200 mm nominal size dia having minimum wall thickness 5.40 mm	10	RM	1302.85	13028.50

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SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
157 (i.)	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 plain slotted (having slot of size 1.6/3.2 mm) mild steel threaded and socketed / plain bevel ended pipe (type A) of required dia, conforming to IS: 8110, of reputed and approved make, having wall thickness not less than 5.40 mm, including painted with outside surface with two coats of anticorrosive bitumastic paint of approved brand and manufacture, including hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer -in-charge. ---100 mm nominal size dia	10	RM	826.09	8260.90
157 (ii.)	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 plain slotted (having slot of size 1.6/3.2 mm) mild steel threaded and socketed / plain bevel ended pipe (type A) of required dia, conforming to IS: 8110, of reputed and approved make, having wall thickness not less than 5.40 mm, including painted with outside surface with two coats of anticorrosive bitumastic paint of approved brand and manufacture, including hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer -in-charge. ---150 mm nominal size dia	10	RM	1115.11	11151.10
157 (iii.)	Supplying, assembling, lowering and fixing in vertical position in bore well, ERW (Electric Resistance Welded) FE 410 plain slotted (having slot of size 1.6/3.2 mm) mild steel threaded and socketed / plain bevel ended pipe (type A) of required dia, conforming to IS: 8110, of reputed and approved make, having wall thickness not less than 5.40 mm, including painted with outside surface with two coats of anticorrosive bitumastic paint of approved brand and manufacture, including hire & labour charges, fittings & accessories, all complete, for all depths, as per direction of Engineer -in-charge. ---200 mm nominal size dia	10	RM	1384.48	13844.80
158 (i.)	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I). ---100 mm dia	10	Each	157.54	1575.40
158 (ii.)	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I). ---150 mm dia	10	Each	196.88	1968.80
158 (iii.)	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I). ---200 mm dia	10	Each	216.53	2165.30
159	Providing & laying in position plain cement concrete (PCC) of 1:5:10 (1 cement : 5 fine/coarse sand : 10 brick/stone aggregate) with a layer of cement slurry of mix 1:6 (1 cement : 6 Fine Sand) over PCC layer as per Technical Specification.	1553	Cum	3203.25	4973045.63
160(a)	Supply and Erection of Submersible pump with all accessories like Sumbmersible pump, GI pipe, GI bend, Switchboard having 3 phase MCB & disconnector, connection of Local switchboard to submersible pump including cabling, connection between AC Distribution board/BMK to Switchboard through cable (Cable for AC distribution board to Switchboard will be provided by BHEL) for followings: ---7.5HP Submersible Pump	1	Lot	34079.06	34079.06
160(b)	Supply and Erection of Submersible pump with all accessories like Sumbmersible pump, GI pipe, GI bend, Switchboard having 3 phase MCB & disconnector, connection of Local switchboard to submersible pump including cabling, connection between AC Distribution board/BMK to Switchboard through cable (Cable for AC distribution board to Switchboard will be provided by BHEL) for followings: ---5HP Submersible Pump	1	Lot	30671.15	30671.15
161	Antiweed treatment in switchyard area including surface dressing of earth to an extent of $\pm 200$ mm, rolling/compacted to the lines & grades using half ton roller/surface vibrator with suitable water sprinkling arrangement & micro levelling etc all complete as per Technical Specification.	20700	Sqm	16.64	344530.80
162	Supplying and spreading stone aggregate in switchyard as per drawing and specification all complete but excluding micro leveling, dressing & antiweed treatment as per clause No. 5.2.8 of Customer Technical Specification.	20700	Sqm	156.61	3241827.00
163(a.)	Pile Breaking by Mechanical/ Manual means upto cutoff level including providing tools, tackles, labour and disposal of pile concrete for lead upto 1KM, cleaning, straightning, bending of Reinforcement of pile above cut-off Level with pile cap reinforcement etc to complete all the work as per direction and Instruction of Engineer-In-Charge for following Dia Piles. ---450mm Dia. Pile	875	RM	323.66	283202.50

**BILL OF QUANTITY CUM PRICE SCHEDULE**

Name of Project: 765/400kV Sub-Station at Jeerat (West Bengal)

Name of Work: Balance Civil Works for 765/400kV Switchyard &amp; Buildings at Jeerat in West Bengal

SR.NO.	Description of Item	Quantity	Unit	Unit Rate (Rs)	Amount (Rs)
163(b.)	Pile Breaking by Mechanical/ Manual means upto cutoff level including providing tools, tackles, labour and disposal of pile concrete for lead upto 1KM, cleaning, straightning, bending of Reinforcement of pile above cut-off Level with pile cap reinforcement etc to complete all the work as per direction and Instruction of Engineer-In-Charge for following Dia Piles. ---600mm Dia. Pile	1250	RM	542.23	677787.50
164(a.)	Carriage & disposal of surplus Concrete debris beyond 1KM lead by mechanical means not necessarily all the times on pucca roads, including loading, unloading & disposal etc., complete as per specifications -. ---Lead from 1Km to 2 km.	5	cum	178.39	891.95
164(b.)	Carriage & disposal of surplus Concrete debris beyond 1KM lead by mechanical means not necessarily all the times on pucca roads, including loading, unloading & disposal etc., complete as per specifications -. ----Lead from 2Km to 3 km.	5	cum	199.21	996.05
165	Earthwork filling with borrowed earth from outside the substation land including arrangement of borrow area, payment of Royalty, transportation, laying, compaction in layer, all leads and lift etc as per Specification and direction of Engineer-In-Charge.	5000	cum	273.53	1367650.00
166	LEVELING AND FILLING IN PRESENT SCOPE AREA BY CUTTING OF EARTH FROM FUTURE AREAS INCLUDING MOVEMENT AND MAKING ARRANGEMENT OF APPROACH FOR MOVEMENT OF T&P FROM FUTURE AREA TO PRESENT SCOPE AREA FOR LEVELLING WORK INCLUDING ALL ACTIVITIES TO COMPLETE THE WORK : Earthwork in excavation and filling in all types of soil and soft and disintegrated rock in open areas/nallahs/channels to the required slopes , shapes , levels, elevations and profile including trimming of bottom and slopes of excavation , bailing out rainwater (dewatering), pumping, removal of slush,preparing embankment/marginal banks, loosening, dressing,spreading materials in layers not exceeding 200mm, cutting of grass, brushes, tree as per direction of Engineer-in-charge, water flooding,compacting to achieve 95% consolidation at optimum moisture content ,finishing etc all complete, for all leads and lifts,including disposal of surplus earth and stacking of unsuitable material as per designated location with in customer premises, withall labour , material,tools,tackles and equipment,safeguards and incidentals, taxes etc.as necessary , as per drawings, specifications and direction of the Engineer-In-Charge (only excavation/cutting will be measured for payment purpose).	10000	cum	126.61	1266100.00
167	Providing & fixing in position M25 precast Reinforced cement concrete cable trench of various section at various elevations in all kinds of work including concreting, formwork, mixing, laying out, compacting and curing, storing, transportation, erection without damage, setting in position with finished cement and sand mortar, grouting if required etc all as per specs, customer released drawing C/ENGG/PREFAB/STD/CT/01 (5 sheets) (Enclosed) and directions of Engr-in-Charge but excluding the cost of earthwork,Grading concrete, sand filling, reinforcement, inserts, edge angles. (Cement content considered in M-25 is @330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately.)	110	cum	8926.88	981956.80
Total Amount in Rs. ( Excluding GST ) =					676,24,157

## BILL OF QUANTITIES FOR UNDER GROUND EARTHING AND ELECTRODES

Name of Project - 765/400kV Sub-Station at Jeerat (West Bengal)

Name of Work :- Under Ground Earthing and Electrodes for 400kV Yard Jeerat s/s

S. No	Description	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
1	Unloading, storing and laying of 40 mm dia MS Rods at a depth of 600 mm measured from the top of Finished Ground Level and bringing out risers just below gravel level near the equipment foundations as per requirement including following works: - excavation of trenches - laying of MS rod - welding of rods (refer Drg No. C/ENG/STD/EARTHINGS/09, SH-2&3 Rev 00 for Welding details of rods) - backfilling of soil for bringing out pig tail risers of 40 dia MS rod (approximately 1000) for equipments. Risers shall be raised from the earthmat (at 600 mm depth) to 150 mm above ground level to the nearest point of the equipment. This shall include all cutting, bending, welding, fixing, application of zinc rich paint on cutting surface, etc to the main earthmesh. - any other work necessary to complete the laying of earthmat (40 mm dia MS rod will be supplied by BHEL)	MT	170	6193.78	1052943.23
2	Fabrication & laying of Auxiliary Mat of 40 mm Dia MS Rods at a depth of 300 mm from top of FGL including excavation & backfilling as per Drg No. C/ENG/STD/EARTHINGS/09, SH-4 Rev 00. - any other work necessary to complete the laying of earthmat (40 Diameter MS rod will be supplied by BHEL)	Nos.	200	2235.21	447042.86
3	Installation of Pipe Electrode(to be driven - 3.0 Mtr) as per Drg. No. C/ENG/STD/EARTHINGS/09, SH-5 Rev 00 including following works: - excavation - installing the pipe electrode with alternate layers of Coke/charcoal and salt - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (GI Pipe, Nuts, Bolts & Washers and funnel with wire mesh will be supplied by BHEL)	Nos.	8	8174.70	65397.62
4	Installing of 40 mm diameter Rod Electrode with test pit (LM, Tower with Peak, CVT & LA) as per Drg. No. C/ENG/STD/EARTHINGS/09, SH-6 Rev 00 including following works: - excavation - installing the rod electrode - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (40 mm dia MS rod will be supplied by BHEL)	Nos.	67	3806.68	255047.61
5	Installing of 40 mm diameter Rod Electrode without test pit/link including following works: - excavation/hammering of rod in earth - installing the rod electrode - backfilling and compaction - any other work necessary to complete the work (40 mm Diameter MS rod will be supplied by BHEL)	Nos.	67	3401.23	227882.65
Total Amount in Rs. ( excluding GST)					20,48,314

## **ANNEXURE-III**

**TRANSMISSION BUSINESS GROUP  
(SUB- CONTRACTS MANAGEMENT)  
TBG - NOIDA**

### **PRICE SCHEDULE FORMAT**

**SUB: EXECUTION AND HANDING OVER OF BALANCE CIVIL WORKS FOR 765/400KV SWITCHYARD AND BUILDING AT JEERAT IN WEST BENGAL.**

**TENDER SPEC. NO.:- TBSM/JEERAT /BAL-CIVIL-400 KV YARD/TENDER/19-20**

**DATE: 08.11.2019**

(a) I/ We hereby agree to execute the above work at ----- % (in figure).....  
----- (in words) Above / Below/ At Par the rates of items given in BOQ  
(Annexure-I & II) of subject tender.

#### **NOTE:**

1. In this annexure the tenderer shall quote a percentage above/ below/At Par the rates shown in the Bill of Quantities (Annexure-I & II) of subject tender. The percentage quoted shall be clearly written both in words and figures In case of discrepancy in rates in figure and words, the minimum will be taken into account by BHEL.
2. The quoted percentage will apply to the individual items uniformly.

Date:

Place

Signature of tenderer  
Name & Designation of authorized person(s) with seal

#### ANNEXURE-IV

##### SUMMARY OF PRICES FOR "EXECUTION AND HANDING OVER OF BALANCE CIVIL WORKS FOR 765/400KV SWITCHYARD AND BUILDING AT JEERAT IN WEST BENGAL".

Tender Spec. no.:- TBSM/JEERAT /BAL-CIVIL-400 KV YARD/TENDER/19-20, Date:- 08.11.2019

SI No.	Description	Amount (Rs.)
1 (a)	Total amount as per the rates in BOQ for "Execution and handing over of balance civil works for 765/400kV Switchyard and Building at Jeerat in West Bengal". <b>(Annexure-I)</b>	676,24,157
1 ( b)	Total amount as per the rates in BOQ for "underground earthing & electrodes" <b>(Annexure-II)</b>	20,48,314
<b>1</b>	<b>Total Amount ( Annexure-I + Annexure-II)</b>	<b>696,72,471</b>
<b>2</b>	Value of percentage above/below/at par (As indicated in Price Schedule Format, Annexure-III) applicable to the total amount of subject work (Sl. no. 1 above)	.....% <b>above/below/ at par</b>
<b>3</b>	<b>Total amount after consideration of percentage above/below/ at par.</b>	