

BHARAT HEAVY ELECTRICAL S LIMITED

INSULATOR PLANT JAGDISHPUR

Amethi

Bill of Quantity:-AC CISF & Vigilance Office

S.no	Description of works	Unit	Quantity	Rate	Amount
1	Cleaning jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30 cm measured at a height of 1 m above ground level and removal of rubbish upto a distance of 50 m outside the periphery of the area cleared.	100 sqm	286.85		
2	Layout of the building including making reference pillar etc complete	Sqm	286.85		
3	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m. All kinds of soil.	Cum	199.89		
4	Anti-termite treatment by injecting chemical emulsion and creating a chemical barrier under foundations and floors, junction of the wall and floor, along the external perimeter of expansion joint as per IS 6313(part-II 1981) at the rate as specified.	Sqm	271.94		
5	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level. 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	Cum	52.93		
6	Reinforced cement concrete work in lintel/roof bend (any thickness) , including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. Upto floor five level excluding cost of centring, shuttering, finishing and reinforcement. 1 : 1.5 : 3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	Cum	36.53		
7	Reinforced cement concrete work in slab (any thickness) , including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts, etc. Upto floor five level excluding cost of centring, shuttering, finishing and reinforcement. 1 : 1.5 : 3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	Cum	30.38		
8	Centering and shuttering including strutting, propping etc and removal of form for:-				
A	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	Sqm	225.136		
B	Suspended floors, roofs, landings, balconies and access platforms	Sqm	251.83		
C	Foundations, footings, bases of columns etc. for mass concrete.	Sqm	38.91		

9	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in : Cement Mortar 1:4 (1 cement : 4 coarse sand)	Cum	60.17		
10	Providing and laying damp-proof Course 40 mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size)	Sqm	33.10		
11	Applying a coat of residual petroleum bitumen of penetration 80/100 of approved quality using 1.7 kg per square mdtre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	Sqm	33.10		
12	Brick work with F.P.S. bricks of class designation 75 in superstructure iabove plinth level upto floor V level in all shapes and sizes in : Cement Mortar 1:4 (1 cement : 4 coarse sand)	Cum	93.54		
13	Half brick masonry with FPS bricks of class designation 75 in superstructure above plinth level upto floor V level.: Cement mortar 1:3 (1 cement : 3 coarse sand)	Sqm	29.06		
14	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50mm +/- 5% total coated thickness (TCT) Zinc coating 120gms as per IS: 277 in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester rop coat 15-18 microns, sheet should have protective guard film of 25 microns minimum to avoid scratches while transportation and should be supplied in single length upto 12metre or as directed by Engineer-in-charge. The sheet shall be fixed using self drilling / self tapping screws of size (5.5 x 55mm) with EPDM seal or with polymer coated J or L hooks, bolts and nuts 8mm diameter with bitumen and GI limpet washers or with GI limpet washers filled with white lead 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.(White colour)	Sqm	9		
15	Providing and fixing T-iron frames(40X40X6) for doors, windows and ventilators of mild steel Tee-sections, joints mitred and welded with 15 x 3 mm lugs 10 cm long embedded in cement concrete blocks 15 x 10 z 10 cm of 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with dash fastener or with fixing clips or with bolts and nuts as required including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer.	Kg	217.00		
16	Providing and fixing factory made PVC door frame of size 50x47mm with a wall thickness of 5mm, made out of extruded 5mm rigid PVC foam sheet mitred at corners and joined with 2 Nos. of 150mm long brackets of 15x15mm MS square tube, the vertical door profiles to be reinforced with 19x19mm MS square tube of 19 gauge, EPDM rubber gasket weather seal ot be provided through out the frame. The door frame to be fixed to the wall using MS scews of 65 / 100 mm size complete as per manufacturer's specification and direction of Engineer-in-charge.	Rm	14.7		

17	<p>Providing and fixing anodised aluminium work for doors, windows, ventilators and partitions with extruded built up 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.</p> <p>Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and panelling to be paid for separately.)</p> <p>Powder coated aluminium (minimum thickness of powder coating 50 micron).</p>	Sqm	5.4		
18	<p>Providing and fixing ISI marked flush door shutters conforming to IS:2202 (Part-1) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.</p> <p>30 mm thick including ISI marked Stainless Steel butt hinges with necessary screws.</p>	Sqm	18.9		
19	<p>Providing and fixing to existing door frames</p> <p>24mm thick factory made PVC door shutters made of styles and rails of a UPVC hollow section of size 59 x 24 mm and wall thickness 2mm +/- 0.2mm with inbuilt edging on both sides. The styles and rails mitred and joined at the corners by means of MS galvanised / plastic brackets of size 75 x 220mm having wall thickness 1.0mm and stainless steel screws. The styles of the shutter reinforced by inserting galvanised MS tube of size 20 x 20mm and 1mm +/- 0.1mm wall thickness. The lock rail made up of 'H' section, a UPVC hollow section of size 100x24mm and 2mm +/- 0.2mm wall thickness fixed to the shutter styles by means of plastic / galvanised MS 'U' cleats. The shutter frame filled with a UPVC multi chambered single panel of size not less than 620mm, having overall thickness of 20mm and 1mm +/- 0.1mm wall thickness. The panels filled vertically and the bar at two places by inserting horizontally 6mm galvanised MS rod and fastened with nuts and washers, complete as per manufacturer's specification and direction of Engineer-in-charge (For WC and bathroom door shutter).</p>	Sqm	5.04		
20	Fixing of Door Chowkhats and windows	Each	29		
21	<p>Providing and fixing fly proof galvanised M.S. wire gauze to windows and clerestory windows using galvanised M.S. wire gauze with average width of aperture 1.4 mm in both directions with wire of dia.0.63 mm.</p> <p>With 12 mm mild steel U beading.</p>	Sqm	37.44		
22	<p>Providing and fixing factory made ISI marked steel glazed doors, windows and ventilators side / top / centre hung with beading and all members such as K11 B and K12 B etc., complete of standard rolled steel sections, joints mitred and flash butt welded and sash bars tenoned and riveted with with 15 x 3 mm lugs, 10 cm long, embedded in cement concrete blocks 15 x 10 x 10 cm of 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including providing and fixing of hinges, pivots, float glass panes with glazing clips and special metal sash putty of approved make and a priming coat of approved steel primer excluding the cost of other fittings except necessary hinges or pivots complete as per approved design. (sectional weight of only steel members shall be measured for payment without weight of glass & other fittings).</p>	kg	854.35		

23	Providing and fixing glass pane with putty and glazing clips in steel doors, windows,clestory windows,all complete with: 4 mm thick glass panes	Sqm	37.44		
24	Door and window fittings				
I)	Providing and fixing aluminium sliding door bolts ISI marked 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	Each	30		
II)	Providing and fixing aluminium tower bolts ISI marked 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 : 150 x 10 mm	Each	124		
III)	Providing and fixing aluminium handles ISI marked 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 : 125 mm	Each	82		
IV)	Providing and fixing aluminium tower bolts ISI marked 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 : 250 x 10 mm	Each	59		
V)	Providing and fixing aluminium casement stays 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. 250 mm	Each	52		
25	12 mm cement plaster of mix : 1:4 (1 cement : 4 coarse sand)	Sqm	254.01		
26	15 mm cement plaster on the rough side of single or half brick wall of mix : 1:6 (1 cement : 6 Coarse sand)	Sqm	573.58		
27	12 mm cement plaster of mix : 1:6 (1 cement : 6 Coarse sand)	Sqm	408.9		
28	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth: consolidating each deposited layer by ramming and watering, lead upto 50 m and lift upto 1.5 m.	Cum	120.63		
29	Supplying and filling in plinth with local sand under floors including, watering, ramming consolidating and dressing complete.	Cum	37.61		
30	Providing and fixing on wall face unplastised - PVC moulded fittings / accessories for unplastised - 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)	Bend 87.5 degree, 110 mm	Each	8		
II)	Shoes(Plain) , 110 mm	Each	8		
31	Providing and fixing unplastised-PVC pipe clips of approved design to unplastised-PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. 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	Rm	25.5		

32	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 the directions of Engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item.)	Sqm	5.4		
33	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, and panelling by glass strips 25 mm X 4 mm but excluding the cost of nosing of steps etc. complete. 40 mm thick with 20 mm nominal size stone aggregate.	Sqm	204.84		
34	Cement plaster skirting (upto 30 cm height) with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement.	Sqm	30.42		
35	Providing and laying Ceramic glazed floor tiles 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS: 15622 of approved make in all colours, shades, except White, Ivory, Grey, Fume Red Brown laid on 20 mm thick bed of Cement Mortar 1:4 (1 Cement : 4 Coarse sand) including pointing the joints with white cement and matching pigment etc. complete.	Sqm	10.28		
36	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-charge in skirting, risers of steps and dados over 12mm thick bed of Cement Mortar 1:3 (1 Cement : 3 Coarse sand) and jointing with grey cement slurry @ 3.3 Kg. per sqm. including pointing in white cement mixed with pigment of matching shade complete.	Sqm	38.00		
37	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade:Two or more coats on new work + Applying one coat of cement primer of approved brand and manufacture on wall surface	Sqm	662.91		
38	Finishing walls with Acrylic Smooth exterior paint of required shade : New work (Two or more coat applied @ 1.67 ltr/10sqm. over and including base coat of water proofing cement paint applied @ 2.20 kg/10 sqm.)	Sqm	573.58		
39	Structural steel work in single section fixed with or without connecting plate including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	Kg	158.9		

40	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 over an under coat of suitable shade with ordinary paint of approved brand and manufacture.	Sqm	79.06		
41	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS:6315 marked, 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 the direction of Engineer-in-charge. With Stainless Steel cover plate.	Each	2		
42	Making Plinth Protection 50mm thick of cement concrete 13:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm bed by dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth.	Sqm	66.72		
43	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. (Only reinforcement steel will be provided by BHEL) Thermo-Mechanically Treated bars.	Kg	6679.87		
44	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast iron P or S trap, 10 litre low level P.V.C. flushing cistern with manually controlled device (handle lever) conforming to IS : 7231, Parryware/Hindware/ Seabird/Orient (Coral) with all fittings and fixtures complete including cutting and making good the walls and floors wherever required. White Vitreous Chine Orissa pattern W.C. pan of size 580 x 440 mm with integral type foot rests..	Each	2		
45	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern with manually controlled device (handle lever), conforming to IS : 7231,) with all fittings and fixtures complete cutting and making good the walls and floors wherever required :W.C. pan with ISI marked black solid plastic seat and lid.	Each	1		
46	Providing and fixing wash basin with C.I. brackets, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required :White Vitreous China Wash basin size 630 x 450 mm with a pair of 15 mm C.P. brass pillar taps.	Each	4		
47	Providing and fixing 600 x 450 mm bevelled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	Each	4		
48	Providing and fixing toilet paper holder :C.P. brass	Each	3		
49	Providing and fixing soil, waste and vent pipes:Sand cast iron S&S pipe, 100 mm	Rm	25		
50	Grading roof for water proofing treatment with: Cement concrete 1:2:4 (1cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size)	Cum	9.37		
51	Providing and fixing plain bend of required degree :Sand cast iron S&S as per IS - 1729., 100 mm	Each	6		
52	Providing and fixing double equal junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.Sand cast iron S&S as per IS - 1729. 100X100X100X100mm	Each	3		

53	Extra for providing and mixing water proofing material 'Impermo' or equivalent in cement concrete work @ 1 Kg. per 50 Kg. of cement.	kg	60		
54	Providing and fixing collar :Sand cast iron S&S 100 mm	Each	12		
55	Providing lead caulked joints to sand cast iron/centrifugally cast (spun) iron pipes and fittings of diameter:100 mm	Each	30		
56	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain and Brass threaded fitting with one step CPVC solvent cement, trenching,refilling & testing of joints complete as per direction of Engineer in charge (internal work). 15 mm nominal outer dia pipe	Metre	50		
57	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain and Brass threaded fitting with one step CPVC solvent cement, trenching,refilling & testing of joints complete as per direction of Engineer in charge (external work). 32 mm nominal outer dia pipe	Metre	30		
58	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain and Brass threaded fitting with one step CPVC solvent cement, trenching,refilling & testing of joints complete as per direction of Engineer in charge (internal work). 20 mm nominal outer dia pipe	Metre	30		
59	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete.25 to 40 mm nominal bore	Each	4		
60	Providing and fixing P.T.M.T. bib cock of approved quality and colour.15 mm nominal bore 86 mm long, weighing not less than 88 gms.	Each	4		
61	Providing and fixing P.T.M.T. stop cock of approved quality and colour.15 mm nominal bore, 86 mm long, weighing not less than 88 gms.	Each	6		
62	Providing and fixing PTMT push cock of approved quality and colour .15 mm nominal bore, 80 mm long, weighing not less than 46 gms.	Each	2		
63	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end).32 mm nominal bore.	Each	1		
64	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved qualityand colour. .15 mm nominal bore, weighing not less than 32 gms.	Each	2		
65	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved qualityand colour.20 mm nominal bore, weighing not less than 40 gms. .	Each	2		
66	Providing, laying and jointing glazed CPVC 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	Meter	137		
67	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)around S.W. pipes including bed concrete as per standard design:100 mm diameter PVC/RCC Pipe	Meter	137		
68	Providing and fixing square-mouth S.W. gully trap grade 'A' complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x 300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design :with F.P.S. bricks class designation 75	Each	4		
69	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand :8 graded stone aggregate 40 mm nominal size) inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :With F.P.S. bricks with class designation 75.				

I)	Inside size 90 x 80 cm and 45 cm deep including C.I. cover with frame (light duty) 455 x 610 mm internal dimensions total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg)	Each	3		
II)	Extra for depth for manholes, Size 90 x 80 cm	metre	0.6		
70	Providing gola 75 x 75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10mm and down gauge) including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design : In 75 x 75 mm deep chase.	Metre	71.6		
71	Making khurras 45 x 45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement rounding the edge and making and finishing the outlet complete.	Each	8		
72	Providing and placing on terrace (at all floor levels) polyethylene water storage tank ISI : 12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank	Litre	500		
73	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430 x 260 x 350 mm and 340 x 410 x 265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I. clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required : One urinal basin with 5 litre P.V.C. automatic flushing cistern .	Each	3		
74	Providing and fixing trap of of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors : 100 mm inlet and 100 mm outlet	Each	9		
75	Cutting road and making good the same including supply of extra quantities of materials i.e. aggregate, moorum screening, red bajri and labour required. Bituminous portion	Cum	9		
			Final amount		

Signature of Contractor
with full address

Engineer(Civil)

NOTE:-

- 1 All the T&P will be arranged by the contractor.
- 2 All the safety precaution will be taken by contractor at site.
- 3 The BHEL general terms and condition of contract will be applicable as stipulated by BHEL.
- 4 LD clause will be applicable under the contract as stipulated in General terms and conditions of contract.
- 5 All the material excluding cement and reinforcement will be in the scope of contractor.
- 6 **Only Cement and reinforcement steel will be provided by BHEL.**