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TENDER SPECIFICATION

TENDER NO. BHEL:NR(SCT):ARAVALI:STORES:461

FOR

CONSTRUCTION OF SITE OFFICE, STORAGE SHED AND OTHER
INFRASTRUCTURE FACILITIES AT 3 X 500 MW ARAVALI SSTP
TPS STAGE I, DIST. JHAJJAR, HARYANA.

PART II – PRICE BID



Bharat Heavy Electricals Limited
(A Govt. Of India Undertaking)
Power Sector – Northren Region,
Plot No. 25 , Sector - 16A ,
Distt. Gautam Budh Nagar, NOIDA – 201 301(INDIA)



ISO 9001-2000, ISO 14001
and OHSAS 18001 certified
company
SubContract and Purchase
Deptt.

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Plot No. 25 , Sector - 16A ,
Distt. Gautam Budh Nagar, NOIDA – 201 301(INDIA)
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IMPORTANT NOTE

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THIS TENDER SPECIFICATION ISSUED TO:

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SI No	CODE	DESCRIPTION OF ITEM	UNIT	TOTAL QTY	RATE (Rs.)	AMOUNT (Rs.)
		(A) CIVIL WORKS				
		EARTHWORK/SITE CLEARANCE/ROADWORK				
1	C1	Clearing jungle including uprooting of rank vegetation, grass, brushwood, 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 200 m outside the periphery of the area cleared	sqm	50800.00		
2	C2	Surface dressing of the ground including removing vegetation and in-equalities not exceeding 15 cm deep and disposal of rubbish, lead upto 50m and lift upto 1.5m All kinds of soil	sqm	50800.00		
3	C3	Earth work in excavation in all types of ordinary and hard soil including removal of vegetation, shrubs and debris, getting out and stacking the excavated soil, dressing of sides and ramming of bottom, dewatering of accumulated water from any source and keeping the surface dry for subsequent works such as concreting form work etc. and disposal of surplus excavated soil as directed, disposed soil to be neatly levelled and dressed lead upto 100 meters and lift upto 2.0 meter complete	Cu.M	1380.00		
4	C4	Back filling available excavated earth in trenches, plinth, slides of foundations etc., including re-excavating the deposited soil excavated earlier, breaking clods, laying at all depths and heights in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering complete lead upto 50 Metre and lift upto 1.5 Meter	Cu.M	740.00		
5	C5	Disposal of surplus excavated earth and debris including re-excavating the deposited soil earlier, transportation, loading, unloading, laying at all depths and heights, leveling and dressing both the area (viz. From where earth is transported and where it is deposited) to required levels and slopes, complete with all lifts as directed.				
5-a	a)	upto 1.0 km	Cu.M	600.00		
5-b	b)	1km to 2 km	Cu.M	40.00		
6	C6	Preparation of subgrade by 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 disposal of surplus earth lead upto 50 Mtrs	sqm	300.00		
7	C7	Consolidation of site area with power road roller of 8 to 12 tonne capacity including making good the undulations etc. with earthen quarry spoils etc. and retrolling the subgrade.	sqm	100300.00		
8	C8	Laying water bound macadam with specified stone aggregate stone screening and binding material including screening, sorting, spreading to template and consolidation with power road roller of 8 to 10 tonne capacity etc. complete with supply for stone aggregate, screenings, kankar, moorum and red bajri etc.				
8-a	a)	SubBase with stone aggregate 90 mm to 45 mm size including stone screening 13.2mm size.	cum	2600.00		
8-b	b)	Base course with 63 mm to 45 mm size including stone screening 13.2mm size.	cum	16880.00		

SI No	CODE	DESCRIPTION OF ITEM	UNIT	TOTAL QTY	RATE (Rs.)	AMOUNT (Rs.)
9	C10	Providing and tilling of quarry dust as levelling course compacting the same with 8 to 10 ton road roller complete in all respects as directed by Engineer-in Charge	cum	308.00		
10	C10a	Providing and tilling of murrum as levelling course compacting the same with 8 to 10 ton road roller complete in all respects as directed by Engineer-in Charge	cum	308.00		
11	C11	Supplying the good earth from outside the site including the cost of filling the same within the site in layer not exceeding 20cm in depth & consolidating each deposited layer by ramming and watering including all leads & lifts etc. complete.	cum	2160.00		
12	C12	Providing approved quality Yellow/silver sand and filling the same where required under floors etc., watering, ramming, consolidating, grading and finishing to final levels and slopes for all lifts and leads involved, complete as directed. (Pavment to be made for solid measure of the consolidated filling).	Cu.M	550.00		
		PCC				
13	C13	Providing and injecting chemical emulsion for pre-constructional anti-termite treatment and creating a chemical barrier under and around the chemical pits, wall trenches, top surface of plinth filling, junction of wall and floor, along the external perimeters, plinth protection of building and expansion joints, surrounding of pipes and conduits, etc. complete as per specification. Holes up to 50mm to 75mm deep at 150mm centre to centre both ways shall be made with 12mm diameter steel rod on the surface to facilitate saturation of soil with the chemical emulsion. (Plinth area of Chlorpyrifos (20% E.C.) is : 9844-1978.	sqm	650.00		
14	C14	Plain cement concrete of mix 1:4:8 (1 cement : 4 coarse sand and 8, 40 mm down graded stone aggregate) for column footing, levelling, floors etc., including cost of all materials, lead, lift, labour charges, consolidation, shuttering, curing etc. complete.	Cu. M	825.00		
15	C15	Making plinth protection 75 mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75 mm bed of dry brick ballast 40 mm nominal size well rammed and consolidated and arouted with fine sand including finishing the top smooth.	sqm	1100.00		
16	C16	Providing and laying and laying damp proof course 40 mm thick with concrete grade 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size and applying a coat of residual petroleum of penetration 80/100 of approved quality using 1.7 kg per sq. metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in KEROSENE OIL.	Sq m	35.00		
17	C17	Providing and fixing at ground level precast 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size)/cement concrete reinforced with 1.6 mm MS wire in sleepers,kerbs,edgings,draains,etc. as per approved pattern and placed in position wit	cum	15.00		
		BRICKWORK				
18	C18	Brick work with class designation 75 in cement mortar 1:6 (1 cement : 6 coarse sand) in foundation, plinth and super structure in thickness of 230 mm including cost of all materials, lead lifts, labour charges, mixing mortar, laying bricks, racking joints, curing etc. all complete as per drawing and specification and direction of Engineer In-charge.	Cu. M	835.00		
19	C19	Brick work with brick of class designation 75 in cement mortar 1:4 (1 cement : 4 coarse sand) in super structure in thickness of 115 mm including cost of all materials, lead lifts, labour charges, mixing mortar, laying bricks, racking joints, curing etc. all complete as per drawing and specification. 2 nos. MS rods of 6 mm dia are to be provided after every 3rd layer for which no additional payment will be made.	Sq. M	1720.00		
		RCC				

SI No	CODE	DESCRIPTION OF ITEM	UNIT	TOTAL QTY	RATE (Rs.)	AMOUNT (Rs.)
20	C20	Reinforced cement concrete of mix 1:1.5:3 (1 cement, 1.5 coarse sand and 3 :20 mm down graded aggregate) for column footing, sunshades, shelves, lintels etc. including cost of materials, lead lift, labour charges for concreting, shuttering, curing etc. complete.	Cu. M.	503.00		
21	C21	Centring and shuttering including strutting, propping etc. and removal of form work for : Lintels, beams, plinth beams, girders, bressumers and cantilevers.	sqm	2890.00		
22	C22	Providing and placing mild steel/ for steel reinforcement for RCC work including cost of all materials, labour for cutting, bending, binding and placing in position complete as per drawing and instruction of Engineer.	MT	40.50		
23	C23	Fabricating and fixing in position, M.S.Holding down bolts with sleeves and washers, nuts and lock nuts etc. including threading of required length and type as per instructions of Engineer I/C				
23-a	a)	Upto 20 mm dia. bolt	kg	4040.00		
		ROOFING				
24	C24	Supply fabrication and erection of structural steel beams,channels,plates,steel tubular trusses, purlines,gates, wind ties, base plates, gusset plates, bolts, nuts etc. complete as per drawings, specifications & instructions of engineer including cost of all materials leads, lifts labour charges etc. and one coat of primer and two coats of approved enamel paint for finished products at site complete as per technical specification and direction of engineer.				
24-a	a)	Trusses (medium grade pipes),Purlins side ties, bottom ties	MT	115.00		
24-b	b)	structural steel for columns, crane girders,etc	MT	50.20		
24-c	c)	Wind ties (Flats) 50 x 6 mm thick, angles,box sections,soild bars for rails etc	MT	5.50		
25	C25	Steel work in built up section/framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel for gates, railings, frames,gratings etc.	kg	850.00		
26	C26	Supplying , fitting & fixing steel rolling shutter , profile type in 18 B.G of approved type of steel lathe section 75 mm wide fitted with coil wire spring to necessitate the fitting of required nos of C.J pulley's on heavy type solid drawn gearless steel tube complete with locking arrangements bothside and outside specially built up side guide channels including,providing a hood for the rolling shutter painting with two coats of approved brand of aluminium paint over a coat of red lead primer complete.				
26-a	a)	Manually Operated	Sq.M	100.00		
26-b	b)	Mechanically and manually Operated	Sq.M	100.00		
27	C27	Providing and fixing corrugated asbestos cement 6 mm thick roofing and side cladding fixed with polymer coated J or L hooks bolts and nuts 8mm diameter with bitumen and GI limpet washer complete (upto a pitch of 60 degrees) including steel primer and 2 coats of approved paint at overlaps. as per tech. specification.	Sq.M	10750.00		
28	C28	Providing and fixing corrugated Translucent Plastic sheet roofing fixed with GI J or L hooks bolts and nuts 8mm diameter with bitumen and GI limpet washer complete (upto a pitch of 60 degrees) including steel primer and 2 coats of approved paint at overlaps. as per tech. specification.	Sq.M	1000.00		
29	C29	Providing and fixing AC ridges and hips including supply and fixing J or L bolts and nuts bitumen & GI washers etc. complete as per Technical Specification including Bitumen coating at all joints .	RM	550.00		

SI No	CODE	DESCRIPTION OF ITEM	UNIT	TOTAL QTY	RATE (Rs.)	AMOUNT (Rs.)
30	C30	Providing and fixing PVC pipe (2.5 kg/cm ²) of 110 mm dia. as rain water pipe in above item complete in all respect including required shoes, bends, etc	RM	110.00		
		CEILING				
31	C31	Providing and fixing at all height false ceiling of 12.5mm thick tapered edge gypsum board conforming to IS : 2095 including providing and fixing of frame work made of special sections power pressed from M.S. sheet and galvanised in accordance with zinc coating 350 as per IS : 277 and consisting of angle cleats of size 25mm wide x 1.6mm thick with flanges of 22mm and 37mm at 1200mm centre to centre one flange fixed to the ceiling with dash fastner 12.5 mm dia x 40mm long with 6 mm dia bolts to the angle hangers of 25x25x.55 mm of reqd. length, and other end of angle hanger being fixed with nut and bolts to G.I.Channels 45x15x0.9 running at the rate of 1200 mm centre to centre to which the ceiling section 0.5 mm thick bottom wedge of 80mm with tapered flanges of 26mm each having clips of 10.5mm at 450mm centre to centre shall be fixed in a direction perpendicular to G.I. Channel with connecting clips made out of 2.64mm diax230mm long G.I. Wire at every junction including fixing the gypsum board with ceiling section and perimeter channels 0.5mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450mm centre to centre with 25mm long drive-all screws @ 230mm interval including jointing and fixing to a flush finish of tapered and square edges of the gypsum board with recommended filler, paper tapes, finisher and two coats of primer suitable for gypsum board as per manufacturers specification and also including the coat of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed all complete as per drawing and specification and direction of the Engineer -in-charge but excluding the cost of painting.	sqm	650.00		
		FINISHING				
32	C32	50 mm thk. Ironc Topping Cement Concrete flooring consisting(1-admixture:2-stone aggregate 6mm nominal size) by volume with metallic hardening compound of approved quality is mixed in the ratio(4:1) (4 cement : 1 metallic floor) hardening compound of approved quality by weight including cement slurry rounding off edges and strips etc. but excluding the cost of nose of steps etc. complete.	Sq. M	6100.00		
33	C33	Providing and fixing glass strips in joints of terrazo / cement concrete floors 50mm wide and 4mm thick	RM	3100.00		
34	C34	Providing and laying Ceramic glazed floor tiles 300 x 300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to NITCO, ORIENT, SOMANY KAJRIA, or equivalent make in colours such as white, Ivory, Grey, Fume Red Brown, laid on 20 mm thck cement mortar 1:4 (1 cement : 4 coarse sand) including the joints with white cement and matching pigment etc. complete.	Sq.M	50.00		
35	C35	Providing and laying vitrified floor tiles in atleast 50x50 cm size (thickness to be specified by the manufacturer) of NITCO, ORIENT, SOMANY KAJRIA, or equivalent make with water absorptions less than 1% and flexural strength not less than 30N/mm ² , in all colours and shades, laid on 20 mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete	Sq.M	500.00		
36	C36	Providing and fixing 18 mm thick granite slab top on kitchen pantry, toilet, counters including making cutouts for wash basins, sinks fixed over 20 mm thick 1:3 cement mortar (1 cement : 3 coarse sand) complete including rubbing, polishing, grinding edge formation as per Architect's drawings (from South Indian quarries).Black colour	Sqm	5.00		

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37	C38	Plastering work with cement mortar 1:6 (1 cement : 6 fine sand) 12 mm thick after scrapping and cleaning the masoary joints including scaffolding, cost of materials, labour, mixing , leads & lifts, curing etc. complete.	Sq. M	4420.00		
38	C39	Plastering work with cement mortar 1:6 (1 cement : 6 fine sand) 15 mm thick after scrapping and cleaning the masoary joints including scaffolding, cost of materials, labour, mixing , leads & lifts, curing etc. complete.	Sq. M	3220.00		
39	C40	Providing and fixing Powder coated (thickness 40-50 microns) Al work for doors, windows, ventilators and partitions with extruded built up standard section of approved make conforming to IS:733 and IS:1285, poeder coated to reqd. shade, 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 reqd PVC/ NEOPRENE felt etc. AL sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever reqd including cleat angle, Aluminium snap beading for glazing/panelling, C.P. brass/ stainless steel screws, all complete ads per				
39-a	a)	For fixed portion	kg	50.00		
39-b	b)	For shutters of doors, windows and ventilators including providing & fixing hinges/pivots and providing and fixing of fittings wherever reqd. including the cost of PVC/neoprene gasket reqd. complete in all respects.	kg	50.00		
40	C41	Providing and fixing glazing in Al work for doors, windows, ventilators and partitions etc. with PVC/ neoprene gasket complete including glazing and panelling with plain/black glass panes of 5.5 mm thick (wt not less than 13.75 kg/sqm)	Sq. M	70.00		
41	C42	Providing and fixing double action hydraulic floor spring of approved brand and manufacture as per IS, Hardwyn make(model 3000) or equivalent for doors including cost of cutting floors as reqd. , embedding in floors and cover plates with brass pivot and single piece M.S sheet outer box with slide plate.etc. with stainless steel cover plate as per direction of Engr. I/C	No.	3.00		
42	C44	Providing and fixing steel glazed windows and ventilators of operable standard rolled steel section joints mitred and welded with 15 x 3 mm lugs, 10 cm long, with steel lugs embedded in cement concrete blocks 15 x 10 x 10 cm of 1:3:6 (1 cement : 3 coarse sand : 6 approved graded hard stone aggregate 20 mm nominal size) or with wooden plugs and screws or raw plugs and screws or with fixing clips or with bolts and nuts as required including providing and fixing of glass panels with glazing clips and special metal sash putty of approved make complete including painting with two coats of approved quality synthetic enamel paint over a base coat of red oxide zinc chromate primer including the cost of minor repair work, if required. Windows and ventilators will be provided with horizontal steel bars (8 mm x 8 mm), welded to the frame @ 150 mm including supply of MS frames, bars glazing etc. all complete	Sq. M	105.00		
43	C45	Providing and fixing 16 mm thick and 100 mm wide bonded commercial plywood pelmets with end coverings including fixing 20 mm diameter aluminium curtain rod with end brackets. The rate includes painting of the wooden surface with two coats over a priming coat of approved quality and colour of best synthetic enamel paint etc., complete for windows and doors.	RM	55.00		
44	C46	Providing and fixing ISI marked flush door shutters non decorative type , core of block board construction with frame of ist class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters 30 mm thick including ISI marked stainless steel butt hinges, handle, bolts, complete with necessary screws and other accessories	Sq. M	20.00		

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45	C47	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 teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters 30 mm thick including ISI marked stainless steel butt hinges, handle,bolts, complete with necessary screws and other accessories	Sq. M	85.00		
46	C48	Providing and laying Ceramic glazed wall tiles 300x200 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 13755 of NITCO, ORIENT, SOMANY KAJARIA, or equivalent make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement Mortar 1:4 (1 cement : 4 Coarse sand) including pointing the joints with white cement and matching pigment etc., complete(2.1 m.ht.).	Sq. M	120.00		
47	C49	Providing three coats of white wash to give a smooth and even shade including cost of materials, cleaning and preparation of surface..scaffolding etc..complete.	sqm	3050.00		
48	C50	Finishing walls/ surfaces with water proofing cement paint of approved brand and manufacture and of required shade to give an even shade.	sq.M	2700.00		
49	C51	Distemping with Oil bound washable distemper of approved brand and manufacture and of required shade to give an even shade on new wall (2 or more coats) over and including priming coat with cement primer.	sq.M	1900.00		
50	C52	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade in two or more coats on new work	sqm	550.00		
		SANITARY/SEWAGE				
51	S1	Providing and fixing white vitreous china water closet squatting pan (Indian type / Oriss pattern WC pan) size 580 x 440 mm with 100 mm sand cast iron P trap, 12.5 Lit. high level CI flushing clastern with fittings RS or CI brackets 32 mm dia meter galvanised iron flush pipe with fitting and clamps 20 mm GI over flow pipe with special and mosquito proof coupling of approved design and GI chain and pull complete including painting of clastern and fittings, cutting and making good the walls and floors where required.	No.	1.00		
52	S2	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, Parryware/Hindware/Seabrid /Orient (Coral) with all fittings and fixtures complete including cutting and making good the walls and floors wherever required : W.C. pan with ISI marked white solid plastic seat and lid	No.	5.00		
53	S3	Providing & fixing flat back white vitreous china wash basin 550 x 400 mm size with single 15 mm C.P.brass pillar with R.S. or C.I. brackets painted white 15 cm C.P. brass pillar taps C.P. brass chain with rubber plug, 32 mm dia CP Brass trap and M.I. unions, C.P. waste, C.P. connection, soap dish , waste pipe complete including cutting and making good the walls wherever required under counter complete in all respects	No.	5.00		
54	S4	Providing and fixing Salem Stainless Steel A ISI 304 (18/8) kitchen sink as per I.S. 13983 with C.I. brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required .:Kitchen sink with drain board 510x1040mm.bowl depth 178mm	no.	1.00		
55	S5	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 respectiely with automatic flushing cisternwith standard flush pipe and C.P. brass spreaders with brass unions and G.I. clamps complete, includign painting of fittings and brackets, cutting and making good the walls and floors wherever required.				
55-a	a)	One urinal basin with 5 litre white P.V.C. automatic flushing cistern Parryware/Hindware/Seabird/Orient (Coral)	no.	2.00		

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55-b	b)	Range of three urinal basins with 10 litre white P.V.C. automatic flushing cistern Paryware/Hindware/Seabird/Orient(Coral)	set	1.00		
56	S6	Providing and fixing Salem Stainless Steel A ISI 304 (18/8) kitchen sink as per I.S. 13983 with G.I. Brackets and stainless steel plug 40 mm including the walls wherever required.)				
56-a		610 x 460 mm bowl depth 178 mm	each	1.00		
57	S7	Providing and fixing 100 mm sand cast iron grating for gully, floor or Nahanitrap.	each	10.00		
58	S8	Providing and fixing bevelled edge mirror of superior glass (of approved quality) complete lwith 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	sqm	5.00		
59	S9	Providing and fixing C.P.Brass toilet papers holder	each	5.00		
60	S10	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fitting arrangement of approved quality colour and make (Prayag or equivalent).				
60-a	a)	450mm long towel rail with total elngth of 495mm, 78mm wide and effective height of 88mm, weighin not less than 170gms.	each	4.00		
60-b	b)	600mm long towel rail with total length of 645mm, width 78mm and effective height of 88mm, weighing not less than 190gms.	each	1.00		
61	S11	Providing and fixing PTMT 15 mm Urinal spreader size 95x69x100 mm with 1/2" BSP thread and shapes as per BIS specification,weighing not less than 60gms (Prayag or equivalent)	each	3.00		
62	S12	Providing and fixing PTMT liquid soap container 109mm wide, 125mm high and 112mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality colour and make, weighing not less than 105gms (Prayag or equivalent)	each	5.00		
63	S13	Providing, laying and jointing glazed stone ware 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 dia pipe.	RM	100.00		
64	S14	Providing, laying, fitting and jointing medium grade GI pipes , conforming to IS 1239 for water lines at various elevations with all fittings stop cock, valve bends, elbows, tees, reducers., etc. making grooves in the brick wall, etc. (Internal work), trenching, refilling etc. (external work) including cost of all materials, labour charges etc. complete as per specifications and drawings				
64-a	(a)	25 mm dia G.I. Pipe (External work)	RM	50.00		
64-b	(b)	20 mm dia G.I. Pipe (Internal work)	RM	50.00		
64-c	(c)	15 mm dia G.I. Pipe (Internal work)	RM	100.00		
65	S15	Providing and fixing brass full way valve with C.I wheel of approved quality etc. complete.				
65-a	(a)	25 mm nominal bore	No.	3.00		
66	S16	Providing and fixing C.P. brass 15 mm stop cock of approved quality of weight not less than 250 gms.	NO	8.00		
67	S17	Providing and fixing C.P. brass 15 mm bib cock of approved quality of weight not less than 250 gms.	No.	6.00		

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68	S18	Construction brick masonry manholes of inside size 90x80 cm and 45-60 cm deep with 75 class designation bricks in cement mortar 1: 5 (1 cement : 5 find sand), RCC top slabs with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm size), foundation concrete 1:1:8 (1 cement : 4 coarse sand : 8 graded stone aggregate of 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded aggregate of 20 mm nominal size) neatly finished complete as per standard design excluding CI manhole cover.	NO.	5.00		
69	S19	Construction of 2.0x0.90x1.60 size Septic tank in all types of soil with 250 mm thick brick masonry in cement Mortar of 1:6 15 cm thick cement concrete 1:4:8 grade in bed, 75 mm thick 1:2:4 grade cement concrete flooring and 100 mm thick over RCC slab of 1:2:4 grade, 75 mm thick partition wall, 15 mm thick plaster on brick wall finished with neat cement providing M.S. rugs etc., complete as per drawing including excavation, disposal of surplus earth with a load of 50 Mtr. item includes all material, labour, leads, lifts etc., complete but excluding C.I manhole cover.	NO.	1.00		
70	S20	Providing and fixing square mouth stone ware gully trap grade'A' conforming to IS:651 complete with G.I. Grating, brick masonry chamber with bricks of class designation '50' and water tight C.I. Cover with frame of 300 x 300 mm size (inside), the weight of cover to be not less than 4.5 kgs and frame to be not less than 2.70 kg as per specification 100X100 MM P TYPE	NO.	4.00		
71	S21	Providing & fixing 100 mm x 100 mm sand cast iron trap of self cleaning design with sand cast iron screwed down or hinged painting with or without vent arm complete including cost of cutting and making good the walls floors etc. all as specified	NO.	5.00		
72	S22	Construction soak pit of 2 Mtr dia and 3 Mtr depth filled with brick bats including S.W. drain pipe 100 mm dia and 1.2 meter long complete as per standard design.	NO.	1.00		
73	S23	Providing and laying soil, waste and vent pipes, centrifugally cast (spun) iron S&S pipes				
73-a	a)	100mm	RM	50.00		
73-b	b)	75 mm	RM	30.00		
74	S24	Supplying and installation of HDPE cylindrical and vertical water tank with closed top of SINTEX or approved equivalent of undermentioned capacity with all necessary fittings including supplying and fixing input and out outlets including support of brick pillars of height of 3 Mtrs each complete				
74-a	a)	500 Ltr. Capacity tank	per litre	1000.00		
75	S25	Providing and Laying of non-Pressure NP2 class (light duty) RCC Pipe with collar of 250 mm dia jointed with stiff mixture of cement motar in proportion of 1:2 (1 cement :2 fine sand)including testing of joints etc complete	RM	10.00		
76	S26	Construction of brick masonry road gully chamber 50 cm x 45 cm x 60 cm with MPS Brick of class 75 kg in cement mortar (1 cement : 6 fine sand) including 500 , 450 mm RCC precast horizontal with frame completed as per standard specification	EACH	2.00		
77	S27	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet-100 mm dia	each	1.00		
		FENCING				

SI No	CODE	DESCRIPTION OF ITEM	UNIT	TOTAL QTY	RATE (Rs.)	AMOUNT (Rs.)
78	F1	2.4 m high fencing with 3 m angle iron 50 x 50 6 mm posts placed every 3 m centre to centre embedded in cement concrete block, every 15th post last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with 12 horizontal lines and two diagonals inter woven with horizontal wires of barbed wire 9.38 Kg per 100 m (min) between the two posts and fixed with GI staples, turn buckles etc. complete. including providing and laying earth work and concrete (1:3:6)				
78-a		With G.I. Barbed wire	Metre	4400.00		
79	F2	Supplying at site Angle iron post & strut of required size including bottom to be split and bent at right angle in opposite direction for 10 cm length and drilling holes upto 10 mm dia. Etc. complete including a priming coat and two coats of enamel paint	kg	22000.00		
80	F3	Cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 40 mm nominal size) in pavements, laid to required slope and camber in panels as required including minimum reinforcement, consolidation finishing and tamping complete including laying in position bitumen hot sealing compound for expansion joints	cum	35.00		
		HORTICULTURE				
81	H1	Renovating lawns by grassing 'doob' including weeding, cheeling the grass, forking the ground, top dressing with sludge or manure, mixing the same with forked soil, watering and maintaining the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for mowing and disposal of rubbish as directed, including supplying good earth if needed but excluding the cost of sludge or manure (the good earth shall be paid for separately).	sqm	200.00		
82	H2	Preparation of beds for hedging and shrubbery and plantation of hedges by excavating 60cm deep and trenching the excavated base to a further depth of 30cm, refilling the excavated earth after breaking clods and mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, filling with earth if necessary, watering and finally fine dressing, levelling etc. including stacking and disposal of materials declared unserviceable and surplus earth by spreading and levelling as directed, within a lead of 50m lift upto 1.5 m complete including cost of sludge, manure or extra earth	cum	100.00		
83	H3	Edging with bricks laid dry length-wise including excavation, refill-ing, consolidating with hand packing and spreading neatly surplus earth within a lead of 50 m : 75 class designation FPS bricks	RM	100.00		
84	E1	Providing and fixing 1 x 40 Watt Batten type fluorescent tube fitting (Crompton / Philips / Bajaj make), fabricated from CRCA sheet steel and finished with stove enamel paint complete with Accessories like fluorescent lamp, copper wound polyster choke, starter, seat, rotor holder and terminal block duly pre-wired with copper conductor, including connections, fixing on wall, false ceiling or under roof tusties with clamps as required	Nos.	90.00		

SI No	CODE	DESCRIPTION OF ITEM	UNIT	TOTAL QTY	RATE (Rs.)	AMOUNT (Rs.)
85	E2	Providing and fixing 2 x 40 Decorative type fluorescent tube fitting (Crompton / Philips / Bajaj make),fabricated from CRCA sheet steel and finished with stove enamel paint complete with Accessories like fluorescent lamp,copper wound polyster choke, starter, seat, rotor holder and terminal block duly pre-wired with copper conductor, including connections, fixing on wall, false ceiling or under roof tusties with clamps as required	Nos.	285.00		
86	E3	Providing and fixing of bulkhead (outdoor) type fixture with glass cover and galvanized wire guard with 1 x 100 W GLS lamp (Crompton / Philips/Bajaj / Mayfare make), complete with lamp and fixing clamp etc.	Nos.	159.00		
87	E4	Providing and fixing 1 x 250 W HPSV out door type fittings (Crompton / Philips/Bajaj), complete with lamp, ballast control gear box, fixing clamp etc.	Nos.	144.00		
88	E5	Providing and fixing of following sweep exhaust fan (Khaitan / Crompton make) single phase alongwith gravity louvers, frame / tripod for holding the motor including making necessary opening in wall, supply & fixing of assembly with grouting bolts, making connections, loop earthing etc.				
88-a	E6	230 mm sweep	Nos.	6.00		
88-b	E7	300 mm sweep	Nos.	14.00		
89	E8	Providing & fixing of 240 V, 5 / 15 Amp 6 Pin Power socket outlet point (with 15 A switch). Switch / socket to be fitted in suitable size 20 SWG metal type box with 3mm sunmica sheet	Nos.	105.00		
90	E9	Providing & fixing of 240 V, 5A 3 Pin Power socket outlet point (with switch). Switch / socket to be fitted in suitable size 20 SWG metal type box with 3mm sunmica sheet along with the piano switches and fan regulator	Nos.	73.00		
91	E10	Providing & fixing 5A piano type switch for Light / Fan Control (Anchor make)	Nos.	150.00		
92	E11	Providing and Fixing of 20/25 mm PVC Conduit (including fittings) for telephone / LAN Connection / Call bell System	mtr	25.00		
93	E12	Providing Wires and wiring for Telephone / Call Bell System	mtr	25.00		
94	E13	Providing and Fixing of suitable box for telephnone / LAN/Call Bell points	Nos.	25.00		
95	E14	Providing & fixing of 240 V, 20 Amp INDUSTRIAL Power socket outlet point (with 20 A MCB). Switch / socket to be fitted in suitable size 20 SWG metal type box .	Nos.	15.00		
96	E15	Wiring of above power sockets with 4 Sq. mm PVC insulated Copper Conductor wires as per IS, 650 / 1100 V grade including 20 SWG GI earthing wire in PVC medium grade conduit including supply of items.				
96-a	E16	(a) Length per point upto 20 m	Points	40.00		
96-b	E17	(b) Length per point upto 30 m	Points	75.00		
96-c	E18	(c) Length per point upto 40 m	Points	45.00		

SI No	CODE	DESCRIPTION OF ITEM	UNIT	TOTAL QTY	RATE (Rs.)	AMOUNT (Rs.)
96-d	E19	(d) Length Among Points	Points	40.00		
97	E20	Wiring of the following points (including supply of Wires, conduits, clamps, boards, other misc. items) with 2.5 sq.mm colour coated PVC insulated copper conductor wires as per IS- 650/1100 volts grade in surface PVC conduits (medium grade) including laying of 20 SWG GI wire, conduit fitting. (Fixing of piano type control switches (Anchor make) in suitable sized 20 SWG metal box with 3 mm sumnica sheet having provision for fan regulator, 5 Amp switch socket (supplied above) included in scope)				
97-a	a)	Long Point (Panel to Switch Box)	Points	85.00		
97-b	b)	Medium Point (Switch Box - first Point / Socket)	Points	85.00		
97-c	c)	Short Point (among points)	Points	290.00		
97-d	d)	Wiring for ceiling fan and regulator	Points	40.00		
97-e	e)	Wiring for exhaust fan.	Points	14.00		
97-f	f)	1 x 250 W HPSV out door type fitting. One number 10 A DP switch to be used for controlling 2 fittings. D.P Switches to be fixed on outside of the store shed wall	Points	162.00		
98	E21	Providing and fixing of 32 Amp TPN with HRC fuses along with earth wire. The TPN to be provided on one side of the central shed with rain protection cover.	Nos.	12.00		
99	E22	Supply and burying of earths electrods 40mm dia 3 mtrs. Long including earthing upto switch board with 8 SWG GI wire.	Nos.	60.00		
100	E23	Installation and commissioning of 3-ph 4W 1000 / 400 A Electrical Switchboard (appx size 1600 x 1000 x 2000 mm) . (Foundation will be paid in civil works)	set	1.00		
101	E24	Providing , Installation and commissioning of 24 W Lighting Panel with 10 no. 20 A MCB and 14 nos 16 A MCB with 125 A SFU incomer in Sheet metal housing with double door arrangement , including all earthing and statutory requirements .	Nos.	1.00		
102	E25	Providing , Installation and commissioning of 18 W Lighting Panel with 18 nos 16 A MCB with 63 A SFU incomer in Sheet metal housing with double door arrangement , including all earthing and statutory requirements .	Nos.	2.00		
103	E26	Taking delivery from stores and laying of following type of PVC Insulated, PVC armoured standard aluminium conductor cable conforming to IS:1554-1976 (part 1), glanding with single compression gland, termination of both end in DB & SFU. The cable has to be laid underground on sand cushion including backfilling, susitable clamp, clamping on surface including all materials etc. complete.(Only cable will be issued by BHEL as free issue item and all other materials are to be provided by the contractor).This includes road crossing for which suitable GI Pipe to be provided by the contractor.				
103-a	a)	3 1/2 core x 185 / 300 Sq.mm armoured cable	RM	125.00		

SI No	CODE	DESCRIPTION OF ITEM	UNIT	TOTAL QTY	RATE (Rs.)	AMOUNT (Rs.)
103-b	b)	3 1/2 Core x 50 / 95 Sq.mm armoured cable	RM	1325.00		
103-c	c)	2c/3c/4c upto 16 sq.mm armoured cable	RM	2050.00		
104	E27	Earthing Flat 30 x 6 for Earthing	RM	700.00		

NOTES:-

1	In case of omission in quoting any rate, the evaluation will be done considering the highest quoted rate obtained against that item but the work, if awarded, will be on the lowest quoted rate obtained against that item.
2	The rate shall be entered in figures as well as in words. In case of difference in rates between words and figures, the lesser of the two will be treated as valid rate.
3	The bidders shall enter both 'Unit Rate' & 'Amount'. In case of any mismatch between 'Total Amount based on Unit Rate' & 'Total Amount as quoted', the lower of the two shall be considered for evaluation and award.
4	The quantities indicated against each item above are tentative and are liable to vary depending upon the site requirement. The contractor has to supply / install actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be worked out.
5	Evaluation of the bids shall be done based on total price against this BOQ.