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## TENDER SPECIFICATION

**TENDER NO. BHEL:NR(SCT): ALLAIN DUHANGAN :STORE:350**

FOR

CONSTRUCTION OF STORE AT 2X96 MW ALLAIN DUHANGAN HEP AT VILLAGE PHIRNI NEAR MANALI TOWN,  
DISTT KULLU, HIMACHAL PRADESH.

### **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

**IMPORTANT NOTE**

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THIS TENDER SPECIFICATION ISSUED TO:

M/S-----

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BILL OF QUANTITY FOR STORAGE SHED FOR ALLAIN DUHANGAN					
TENDER NO. BHEL:NR(SCT): ALLAIN DUHANGAN :STORE:350					
S.No.	Item Description	Unit	Qty	RATE (Rs.)	AMOUNT (Rs.)
	<b>EARTH WORK</b>				
1	Earth work in surface excavation in all types of hard or ordinary soil including removal of vegetation, shrubs and debris, dressing of sides and ramming of bottom, dewatering of water if reqd. to keep the surface dry for subsequent formwork or concreting including disposal of excavated earth upto 100 m and lift upto 2 m, disposed soil to be levelled and neatly dressed.	m3	60		
2	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 up to 50m and lift upto 1.5m	m3	60		
3	Supplying and filling approved quality yellow sand where required under floors including , watering, ramming, consolidating and dressing complete	m3	30		
4	Surfact 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	m2	400		
	<b>CEMENT CONCRETE</b>				
5	Providing and laying in position cement concrete of specified grade for column footing, levelling, floors,etc including the cost of materials, labour, centring and shuttering - All complete:1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size)	m3	40		
6	Providing and laying damp-proof course 40mm thick with cement concrete 1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 12.5 nominal size) and applying a coat of residual petroleum bitumen of penetration 80/100 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of clot lightly soaked in kerosene oil.	m2	20		
	<b>REINFORCED CEMENT CONCRETE</b>				
7	Providing and laying in position specified grade of reinforced cement concrete for columns,footings, etc.including the cost of materials, labour, centring, shuttering& finishing.				
a	1:1.5:3 (1 Cement : 1.5 coarse sand : 3 graded stone aggregate 20mm nominal size)	m3	8		
8	Reinforcement for RCC work including straightening, cutting, bending,placing in position and binding all complete: cold twisted bars	kg	200		
	<b>DISMANTLING WORK</b>				

S.No.	Item Description	Unit	Qty	RATE (Rs.)	AMOUNT (Rs.)
9	Taking out doors, windows and clerestory windows (steel or wood) shutter including chowhats, architrave, holdfasts etc. complete and stacking within 50 metres lead:	each	25		
10	Dismantling steel work in built up sections in angles, tees, flats, pipes and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc.in structural steel columns, purlins, trusses including dismembering and stacking within 50 metres lead.	kg	7000		
11	Dismantling roofing including ridges, hips valleys and gutters etc. and stacking the material in reuseable form within 50 metres lead of:G.S sheet	m2	400		
12	Dismantling gypsum/bison board/hardboard partitions,false ceiling etc. and stacking the material to be reused within 50 metres lead as directed by Engineer I/C				
a)	double skin	m2	200		
b)	single skin	m2	200		
	<b>BRICKWORK/ STONE WORK</b>				
13	Providing random rubble masonry with hardstone in foundation and superstructure including levelling up with cement concrete 1:6:12 (1 Cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size)	m3	30		
14	Brick work with F.P.S. bricks of class designation 75 in foundation, plinth and superstructure in Cement mortar 1:6 (1 Cement 6 fine sand) complete with raking of joints and curing	m3	20		
15	Half Brick masonry in superstructure in cement mortar 1:3 with bricks of class designation 75 with providing and placing in position 2 nos. 6mm dia M.S.Bars at every third course, complete with raking of joints and curing.	m2	30		
	<b>STRUCTURAL STEEL WORK</b>				
16	Structural steel work welded in built up sections, trusses and framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete. (new work)	MT	1		
17	Re erection in structural steel work welded in built up sections, trusses and framed work including cutting, hoisting, fixing in position after carrying out minor rectification work including supply of base plates, gusset plates, bolts including foundation bolts,complete	kg	8000		
18 a)	Fixing of rolling shutter, supplied as free issue item by BHEL. Contractor has to do minor repairs, greasing, oiling and making it operational and complete in all respects to the satisfaction of Engineer I/C	no.	1		

S.No.	Item Description	Unit	Qty	RATE (Rs.)	AMOUNT (Rs.)
b)	Supplying and fixing of extra rolling shutter leaves if reqd. Contractor has to do minor repairs, greasing, oiling and making it operational and complete in all respects to the satisfaction of Engineer I/C	m2	2		
19	Providing and fixing solid core flush door shutters non decorative type, core of block board construction with well matched commercial ply veneering on both faces of shutters 35 mm thk including all supply and fixing of door frames made up of 40x40x5 Tee section with 15x3 mm, 10cm long lugs embedded in cement concrete blocks 15x10x10 cm of 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size) including all accessories like aluminium handle/tower bolt and iron hinges, aldrop, etc. as per drawing, applying a coat of primer and two coats of enamel paint of approved brand, etc. complete to satisfaction ( Door frames to be provided by BHEL)	m2	9		
20	Fixing standard steel glazed windows and ventilators with 6mm glass in walls with 15x3mm lugs 10cm long embedded in cement concrete blocks 15x10x10cm of 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size) or with wooden plugs and screws of rawl plugs and screws or with fixing clips or with bolts and nuts and required, including fixing of glass panes with glazing clips and special metal-sash putty of approved make, or metal beading with screws (only steel windows with lugs, shall be supplied by department free of cost)	m2	30		
21	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including providing & fixing 40 mm wide 4 mm thick glass strips in panels of 1mx1m , complete 40mm thick with 20mm nominal size stone aggregate	m2	320		
	<b>ROOFING</b>				
22	Fixing corrugated G.S. sheet/ Translucent sheet roofing fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. Limpet washers or with G.I. Limpet washers filled with white lead and including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (upto a pitch of 60 degrees ) excluding the cost of purlins, rafters and trusses ( G S sheet to be provided by BHEL)	m2	320		
23	Providing & fixing ridges or hips of width 60 cm over all width plain G.S. sheet fixed with polymer coated J or L hooks, bolts and nuts 8mm dia G.I. Limpet and bitumen washers complete 0.80mm thick with zinc coating not less than 275gm/m2	RM	30		

S.No.	Item Description	Unit	Qty	RATE (Rs.)	AMOUNT (Rs.)
	<b>FINISHING</b>				
24	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 600 as per IS : 277 and as prevalent practice complete in all respects including recommended filler, paper tapes, finisher and two coats of suitable primer and cuttings and opening if reqd to the satisfaction of Engineer I/C	m2	40		
25	Cement plaster (in fine sand) 12mm cement plaster of mix 1:6 (1 cement : 6 fine sand)	m2	130		
26	15mm cement plaster on the rough side of single or half brick wall of mix 1:6 (1 cement : 6 fine sand )	m2	130		
27	White washing with lime to give an even shade New work (three or more coats)	m2	50		
28	Finishing walls with water proofing cement paint "Snowcem-Plus" of M/s Snowcem India Ltd. or equivalent of required shade. New work (two or more coats applied @ 3.84kg/10sqm	m2	130		
29	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade. New work (two or more coats) over and including priming coat with cement primer	m2	100		
30	Painting on G.S. sheet with synthetic enamel paint of approved brand and manufacture of required colour to give an shade. old work (two or more coats)	m2	50		
	<b>FENCING</b>				
31	1.8 m high fencing with 2.4 m angle iron 50 x 50x 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 struted 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. (Cost of posts, struts, earth work and concrete to be paid for separately).				
	With G.I. Barbed wire	metre	150		
32	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 with a coat of primer.	kg	400		
	<b>SANITARY WORK</b>				

S.No.	Item Description	Unit	Qty	RATE (Rs.)	AMOUNT (Rs.)
33	Providing and fixing water closet equatting pan(Indian type W.C. pan ) with 100 mm sand cast Iron P or S trap, 10 litre low level while P.V.C. flushing cistern withmanually controlled device (handle lever) conforming to IS: 7231, Parryware/Hindware/Seabird/Orient (Coral) with all fittings and fixtrues complete including cutting and making good the walls and floors wherever required.				
	White Vitreous china Orissa patern W.C. Pan of size 580x440 mm with integral type foot rests.	each	1		
34	Providing and fixing white vitreouschina pedestal type water closet (European type) with seat and lid, 10 litre low level flushing cistern with fittings & C.I/M.S. brackets, 40 mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete including painting of fittings and brackets, cutting and making good the walls and floors wherever required.				
	(19.3.2) W.C. panwith ISI marked white solid plastic seat and lid withwhite vitreouschina flushing cistern & C.P. flush bend.	each	1		
35	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:				
	One urinal basin with 5 litre white P.V.C. automatic flushing cistern Parryware/Hindware/Seabird/Orient (Coral).	each	1		
36	Providing and fixing wash basin with C.I/M.S. brackets, 15 mm C.P. brass pillar taps, 32mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:				
	Wash basin size 550 x 400 mm with a pair of 15 mm C.P. brass pillar taps.	each	2		
37	Providing and fixing 100 mm sand cast iron gratingfor gully, floor or Nahanitrap.	each	5		
38	Providing and fixing 600 x 450 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.	no.	2		
39	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats withCP brass screws with concealed fitting arrangement of approved quality colour andmake (Prayag or equivalent).				
	600 mm long towel rail with total length of 645 mm, width 78 mm and effective height of 88 mm, weighing not less than 190 gms.	each	2		

S.No.	Item Description	Unit	Qty	RATE (Rs.)	AMOUNT (Rs.)
40	Providing and fixing PTMT 15 mm Urinal spreader size 95 x 69 x 100 mm with 1/2" BSP thread and shapes as per BIS specification, weighing not less than 60 gms (Prayag or equivalent)	each	1		
41	Providing and fixing G.I. Pipes complete with G.I. Fittings like elboes, tees etc and clamps, including two coats of anti-corrosive bitumastic paint of approved quality, cutting and making good the walls etc.				
a	15 mm dia. Nominal bore (internal work)	metre	50		
b	20 mm dia nomina bore (internal work)	metre	50		
c	25mm dia. Nominal bore (external work)	metre	50		
42	Providing and fixing brass stop cock of approved quality 20.8.2/211				
	15 mm nominal bore	each	2		
43	Providing and fixing gun metal gate valve with C.I. Wheel of approved quality (screwed end)				
a	25mm dia. Nominal bore	no.	2		
44	Providing and laying S&S centrifugally cast (spun)iron pipes (Class LA ) conforming to IS 1536				
a	100 MM DIA PIPE	metre	50		
45	Providing lead caulked joints to spuniron or C.I. Pipes and specials including testing of joints but excludingthecost of pig lead.				
a	100 mm diameter pipe	each	5		
46	Providing and placing on terrace (at all floor levels) polyethylene water storage tank ISI:12701 marked indicating the BIS License No. withcover and suitable lockign arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank (Sintex, Electroplast, Star, Lotus or Equivalent having validISI License).	per litre capacity	1000		
47	Providing and fixing C.P. brass bib cock of approved quality conformingto IS : 8931				
a	15mm nominal bore	no.	2		
48	Providing, Laying and jointing glazed stonewrae pipes grade 'A' with stiff mixture of cement mortar in proportion of 1:1(1 cement: 1 fine sand) including testing of joints, etc.				
a	100 mm dia	metre	20		
b	150 mm dia	metre	20		
49	Providing and fixing square-mouth S.W. gully trap grade 'A' complete with C.I. Grating brick masonry chamber with water tightC.I. Cover withframe of 300 x 300 mm size(inside) the weight of cover to benot less than 4.50 kg. And frame tto be notless than 2.70 kg as per standard design				



S.No.	Item Description	Unit	Qty	RATE (Rs.)	AMOUNT (Rs.)
a	With F.P.S. Bricks class designation 75 size	no.	2		
50	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 12mm 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 cgraded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design				
a	With F.P.S. bricks with class designation 75.size 90x90x60 cm	each	2		
51	Making soak pit 2.5 m diameter 3.0 metre deep with 45 x 45 cm dry brick honey comb shaft with bricks of class designation 75 and S.W. drain pipe 100 mm diameter, 1.8 m long complete as per standard design.				
	With F.P.S. Bricks	each	1		
	<b>TRANSPORTATION</b>				
52	Transportation from village Larji, HP to Allain Duhangan, HP of all dismantled and reusable materials like structural steel, doors, windows, trusses, purlins, G S sheets, bison board, hardboard, etc. as per the instructions of Engineer I/C including weighing, loading and unloading, all complete	MT	8		
	<b>ELECTRICAL WORK</b>				
1	Fixing of fuse switch unit - incomer & Switch fuse unit/MCB Distribution Board Unit - outgoing with necessary interconnection, adapter box ( only Main switch unit/MCB will be given by BHEL free of cost Minor overhauling, adapter box & accessories is contractor scope.	SET	1		
2	Supplying and fixing, three pole and neutral, 1.6 mm thick sheet steel factory fabricated with hinged door and lockable arrangement MCB distribution board 415 Volts, on surface/recess, complete with neutral link, earth bar and earth stud, internal interconnections including painting, earthing etc. Comprising of following rating four pole MCBs complete with connections. Testing and commissioning etc. as required: Incomer 32A TPN MCB & 36 no of 6-20A SPN MCB outgoing & 4 pole 63Amps RCCB of 300mA sensitivity as protection circuit breaker on incoming circuit including interconnection arrangement	SET	1		

S.No.	Item Description	Unit	Qty	RATE (Rs.)	AMOUNT (Rs.)
3	Supply & Laying of 1.1 kv grade 3.5 X 95sqmm Al Cond pvc insulated armoured Cable in ground as per standards/site condition incl termination on both side. <b>As the Main cable from outside source to common panel (ie for Item no 1). Including both the side termination.</b>	RM	100		
4	Wiring for light/Exhaust fan/Holegen light with 2.5 Sqmm size PVC insulated copper wire multi-core cables in surface / recessed MS conduit complete with MS boxes, control switch of Modular type etc. complete as required.Including Submain wiring.	No.	33		
5	Wiring for 3 pin 5/6 Amps plug point with 2.5 Sqmm size PVC insulated copper conductor single core cable in MS conduit complete with MS boxes, control switch along with Multipin 5A socket outlet of Modular type earthing the third pin with 1x1.5 Sqmm size PVC insulated copper multi-core wire complete as required. Including Submain wiring	No.	10		
5a	Multipin 5A socket outlet of Modular type with MS boxes, control switch along with earthing the third pin with 1x1.5 Sqmm size PVC insulated copper multi-core wire complete as required on Board ie Extra socket from existing wiring point for pedestal fan.	no	5		
6	Wiring for 3 pin 15/20A Amps plug point with 6.0Sqmm size PVC insulated copper conductorsingle core cables in MS conduit completewith MS boxes, control switch along with Multipin 15/20A socket outlet of modular type with earthing the third pin with 1x2.5 Sqmm size PVC insulated copper multi-core wire cable completeas required.	No.	12		
7	Providing and fixing of pedestal Fan of austhetic model of 450/400mm sweep single phase 230Volt 900RPM with build in regulator& switch.	No.	5		
8	Providing and fixing of Heavy duty Air circulator of 450mm sweep single phase 230 Volt 900RPM with build in regulator & switch. With 5 mtr cable & plug top for connecting to wall socket.	No.	1		
9	Providing and fixing of Heavy duty 18" Exhaust fan , single phase, 230V, 900 RPM with louvers.	No.	2		
9a	Providing and fixing of light duty 12" Exhaust fan , single phase, 230V, 14400 RPM with louvers. .	No.	2		
10	Supply and erection of pipe earth Electrode in earth pit with reqd salt, charcoal & other works as per IS 3043/ as per sire condition .	No.	2		
11	Providing and laying of earth Flat of 30X6 mm GI Flat for earthing	mtr	50		
12	Providing and laying of earth wire of 8 SWG GI for earthing	mtr	100		
13	Supplying, installation, connecting, testing and commissioning of following fixtures / luminairs including making hanging/fixing arrangements in false ceiling / ceiling with lamps copper ballast, capacitor etc. as required at site.				

S.No.	Item Description	Unit	Qty	RATE (Rs.)	AMOUNT (Rs.)
13a	2x40/36 w Flu tube light fixture (decorative type) with bulb of Philips model or equivalent.indoor fitting including bulb with powder coated reflector to be fixed in side wall/false ceiling with down rod	no	4		
13b	1x40/36 w Flu tube light fixture (decorative type) with bulb of Philips model or equivalent.indoor fitting including bulb with powder coated reflector to be fixed in side wall/false ceiling with down rod	no	4		
13c	2x40/36 w Flu tube light fixture (Industrial type) with bulb of Philips model no.TKC 203/236 or equivalent.indoor industrial fitting including bulb with powder coated reflector to be fixed in side wall/tress with down rod (separate item for down rod).	No.	15		
14	Providing and fixing of 250 W weather proof Halogen Street light fitting with cover including bulb and fixtures etc of Philips or equivalent with necessary fixing arrangement on the roof of the building. (External wall ).	No.	6		
15	Supply & Fixing of 3 phase 60 A Digital Energy Meter with necessary electrical accessories/ fixtures as reqd for measuring whole system power consumption.	No.	1		
16	Supply & providing 19 mm dia 2mm thick M.S Down rod for fixing light in tress	NO	30		
				Sub total	
				<b>TOTAL</b>	

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 same are liable to vary depending upon the site requirement. The contractor has to handle all items indicated by BHEL Engineer for completion of work.

(Seal and signature of Tenderer)