

Bharat Heavy Electricals Limited

High Pressure Boiler Plant

Tiruchirappalli – 620 014. India

Civil Engineering Department (Factory)

TENDER DOCUMENT (PRICE BID)

Name of work : Modernization and Improvements to office Buildings, conference halls, entrance, etc., at various locations in BHEL, Tiruchy Complex.

Value of work : Rs.425 Lakh

Tender Notice No. : 08/10-11

Tender Schedule No. : 19/10-11

Period of Contract : 15 (Fifteen) Months

Issued to M/s / S/Shri :

SCHEDULE 'A'

LIST OF WORKS AND PRICES

DETAILS & QUANTITIES of each item of work shown in the BILL OF QUANTITIES are only approximate. They are given as a guide for the purpose of tendering only and are liable to variation and alteration of the Competent Authority. The work under each item as executed shall be measured and priced at the corresponding rate quoted by the contractor in the BILL OF QUANTITIES

Sl.No.	Description of work / supplied	Total amount of work / supplies (in figures and words)		Period of contract
		Rs.	Ps.	
1.	Modernization and Improvements to office buildings, conference halls, entrance, etc., at various locations in BHEL, Trichy Complex.	4,25,00,000/-		FIFTEEN (15) MONTHS

BILL OF QUANTITIES

Sl.No.	Appx.Qty.	Description of work	TNBP No.	Rate (Both in Unit fig & Words)	Amount Rs.	Ps.
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AS PER SEPARATE SHEETS ATTACHED CONTAINING**14**...PAGES

FROM SERIAL No. **3** to **16**

CONTRACTOR

2

ACCEPTING OFFICER

**BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPPALLI – 620 014**

BILL OF QUANTITIES

NAME OF WORK: Modernization and Improvement to office buildings, conference halls, entrance etc., at various locations in BHEL, Trichy Complex

Sl. No.	Qty.	Description of work	Rate (both in figures and in words) Rs. P.	Unit	Amount Rs. P.
1		Dismantling / removing / demolishing as the case may be of the following by manually/mechanical means and carefully stacking the serviceable materials at site of work or conveying and handing over the same at BHEL stores and disposal of unserviceable materials by transporting and dumping in the near by low level areas within a lead of 100 metres. All as per instructions of Engineer-in-charge.			
a	910.00	Brick work in cement mortar		Cu.m.	
b	2250.00	Old plastering / skirting raking out joints / chipping the concrete and roughening the surface.		Sq.m.	
c	15.00	Plain Cement Concrete		Cu.m.	
d	15.00	RCC works including stacking of steel bars.		Cu.m.	
e	275.00	Precast concrete or stone slabs in walls, partition walls etc., Thickness up to 40mm.		Sq.m.	

CONTRACTOR

3

ACCEPTING OFFICER

Sl. No.	Qty.	Description of work	Rate (both in figures and in words) Rs. P.	Unit	Amount Rs. P.
f	235.00	Precast concrete or stone slabs in walls, partition walls etc., Thickness up to 40mm and up to 75mm		Sqm	
g	4950.00	Ellis pattern finish / Insitu mosaic.		Sqm	
h	1250.00	Tile work in floors and roofs laid in cement mortar		Sqm	
i	1670.00	Doors / Windows / Ventilators (steel or wood) including frame and shutters, holdfasts, hinges, fastenings etc. of area 3 sqm and below.		Each	
j	25.00	Steel partitions including bolts, nuts, cutting rivets, welding etc. and dismembering		Sqm	
k	2640.00	False ceiling / partitions / fixed glazing, all in A.C sheet or hard board or aluminium or gypsum or other materials including connected frame works .		Sqm	
l	1010.00	Removing the existing partition with door carefully from its position without damaging any portion of the partition, handing over the reusable items to the departmental stores / stacking at site. All as per the instructions of Engineer-in-charge. Teakwood partition partly panelled and partly glazed.		Sqm	

Sl. No.	Qty.	Description of work	Rate (both in figures and in words)	Unit	Amount
			Rs. P.		Rs. P.
m	1745.00	Removing the existing partition with door carefully from its position without damaging any portion of the partition, handing over the reusable items to the departmental stores / stacking at site. All as per the instructions of Engineer-in-charge. Teakwood / Aluminium partition panelled or Glazed .		Sqm	
2	80.00	Brick work with F.P.S bricks (second class ground moulded chamber bricks) of class designation 50/75 Cement mortar 1:5 in superstructure above plinth upto floor three level in all shapes and sizes.		Cum	
3	7400.00	Providing, laying and finishing the top of floor with the following best quality slabs of required sizes over a bed of cement slurry @ 4.40 Kg/SQM and a backing layer of cement mortar 1:4, 20 mm (average) thick, finished with flush pointing in white cement using appropriate colour pigment including rubbing and polishing wherever necessary etc. complete, all as per instructions of Engineer in charge and standard specifications. Marbonite tiles or equivalent, 8.50 mm thick (approx.) and 60 x 60 cm size (cement slurry is 3.30 Kg/SQM instead of 4.40 Kg/SQM)		Sqm	
4	1550.00	Providing, laying and finishing the top of floor/wall with the following best quality slabs / tiles of required sizes laid with cement based high polymer modified quick set tile adhesive (water based) conforming to IS 15477, using 5 K.G adhesive per SQM of tile area, in average 3 mm thickness and finishing to the required line, level & alignment, tile mat for joints filling, including rubbing and polishing wherever necessary etc., complete, all as per instructions of Engineer in charge and standard specifications. Rate also includes removing the white wash/distemper/paint thoroughly, chipping or hacking to make the levelled surface, cleaning the surface free from dirt and other foreign matters etc. Marbonite tiles or equivalent,8.50mm thick(approx) & 60 x 60 cm size.		Sqm	

Sl. No.	Qty.	Description of work	Rate (both in figures and in words) Rs. P.	Unit	Amount Rs. P.
5	300.00	Providing, laying and finishing the top of floor with the following best quality tiles of required sizes over a bed of cement slurry @ 3.30 Kg/SQM and a backing layer of cement mortar 1:4, 20 mm (average) thick, finished with flush pointing in white cement using appropriate colour pigment including rubbing and polishing wherever necessary etc. complete, all as per instructions of Engineer in charge and standard specifications. Granite tiles (polished), 8 to 10 mm thick (approx.) - Red (Gem) colour		Sqm	
6	950.00	Providing, laying and finishing the top of floor with the following best quality slabs of required sizes over a bed of cement slurry @ 4.40 Kg/SQM and a backing layer of cement mortar 1:4, 20 mm (average) thick, finished with flush pointing in white cement using appropriate colour pigment including rubbing and polishing wherever necessary etc. complete, all as per instructions of Engineer in charge and standard specifications. Granite Slabs 16- 18mm thick- Laga Red Colour.		Sqm	
7	300.00	Providing, laying and finishing the top of floor with the following best quality tiles of required sizes over a bed of cement slurry @ 3.30 Kg/SQM and a backing layer of cement mortar 1:4, 20 mm (average) thick, finished with flush pointing in white cement using appropriate colour pigment including rubbing and polishing wherever necessary etc. complete, all as per instructions of Engineer in charge and standard specifications. Granite slab 10-12mm thick- Raw Silk .		Sqm	
8	350.00	Finishing the top of all floors with 25 mm thick cement concrete (without using sand) in the proportion of one part of cement and three parts of 3 to 10 mm gauge hard broken granite stone chips, finishing the surfaces smooth, rounding of corners, curing, providing borders etc., complete, all as per standard specifications. (Ellis pattern flooring)		Sqm	

Sl. No.	Qty.	Description of work	Rate (both in figures and in words) Rs. P.	Unit	Amount Rs. P.
9	100.00	Floor finish with 40 mm thick over concrete base while it is wet for proper bonding. 40 mm thick finish consists of one part of cement and one part of 6 mm gauge hard broken granite stone chips (the proportion being by volume) and finished smooth including painting the sides with bitumen etc., complete, all as per standard specifications.		Sqm	
10	270.00	Supply and fixing homogeneous PVC sheets / tiles of approved brand, pattern, colour, shade & manufacture in flooring / skirting on a smooth and damp proof base using rubber based adhesives of approved quality including rolling with light wooden roller weighing about 5 K.G. etc., complete, all as per standard specifications. 1.5 / 1.6 mm thick.		Sqm	
11	235.00	Manufacturing, supplying and fixing in position of anodized Powder coated aluminium single leaved / double leaved glassed door of overall size 1.00m x 2.10m or thereabout with suitable frame work as per the following specification and instructions of Engineer-in-charge. The all-round vertical and horizontal outer frame shall with 4" x 1 3/4 " x 1.6mm (unit weight 1.301 Kg / m) section and for door shutter the bottom member shall be with 3 3/4 " x 1 3/4 " x 1.70 mm thick (unit wt 1.243 kg/m) shutter top and vertical shall be of size 1 3/4 " x 1 3/4 x 1.52mm (unit wt. 0.881 Kg/m) thick and shutter divider shall be of 3 3/4 " x 1 3/4 " x 1.70mm thick (unit wt. 1.243Kg/m) with necessary beadings and rubber gaskets as per standard specification. The panels shall be with 5mm thick plain glass. Door shall be provided with 2 no of 300mm long anodized powder coated aluminium handles, one no of ISI marked heavy duty door closer of approved brand, one No. of 200mm long anodized aluminium tower bolt, suitable lock (4 lever) required top and bottom all as per specification of Engineer- in-charge. Rate included cost of all materials, labour and other incidentals etc., complete.		Sqm	

Sl. No.	Qty.	Description of work	Rate (both in figures and in words) Rs. P.	Unit	Amount Rs. P.
12	1320.00	Providing and fixing powder coated aluminium two track sliding windows of approved colours aluminium sections of size 60 x 28 x 1.20 mm for outer frame , 38 x 17 x 1.20 mm for shutter box and 38 x 17 x 1.20 mm for inter lock 4 mm thick plain glass for panes, PVC wheels, U rubber, screws, locking arrangements etc. complete, all as per instructions of Engineer-in-charge.		Sqm	
13	1320.00	Providing fixing powder coated aluminium alloy grills (DECOGRILLE) of following design and fixing in proper position in windows/ventilators/balconies/partitions/fences/racks etc. with necessary appropriate type, material, brand and quality screws as per manufacturers recommendation etc., complete, all as per the instructions of Engineer-in-charge. DECOGRILLE Design No.DG 902 with 7.50 mm plates.		Sqm	
14	3060.00	Manufacturing, supplying and fixing in position of powder coated aluminium partitions for an approximate height of 3.20m as detailed below: The bottom 90 cm and top 110 cm of the partition shall be of wooden, using 9 mm thick interior grade ISI marked (IS: 12823) three layered melamine faced prelaminate (both side) particle board of approved shade with anodized aluminium frame work. The middle 120 cm height of partition shall be of glazed using 5 mm thick hand frosted and lining glass and anodized aluminium framework of approved quality. The partitions shall be rigidly fixed on floors and walls using 8 mm anchor fasteners including cutting and making good the walls and floors etc., complete.		Sqm	

Sl. No.	Qty.	Description of work	Rate (both in figures and in words) Rs. P.	Unit	Amount Rs. P.
		FRAME WORK: The framework shall be with Powder coated anodized aluminium sections with suitable aluminium beadings and rubber gaskets. The bottom member shall be of size 3 ¾" x 1 ¾" and 1.70 mm thick (weight 1.243 kg/m). The middle, top and vertical members shall be of size 2 ½" x 1 ½" and 1.28 mm thick (weight 0.759 kg/m). The verticals shall be generally spaced at 0.90 m centers and can be suitably varied at corners, wall junctions etc, without affecting the general elevation. Generally all the vertical sections shall be taken up to ceiling height and fixing the same with RC beams / slabs for better rigidity. Rate includes cost of all materials, labour, powder coating and lining the glass works and other incidentals etc., complete.			
15	55.00	Supplying and fixing in position of aluminium powder coated window cum ventilator of which powder coated aluminium window having fixed glass and powder coated adjustable glass louvers above window using standard anodized aluminium section of size 2½" x 1½" for frames confirming to IS: 1948 of latest edition. The fixed and louvered glass panels shall be 5mm thick frosted glass panes. The ventilator should have required No. of louvers fitted properly in aluminium frame work having arrangement to close / open. The rate quoted shall include cost of all materials, labour, fixing charges, locking arrangements etc. all as per standard specifications, drawing and code of practice and instruction of Engineer-in-charge.		Sqm	
16	50.00	Carrying from BHEL stores for powder coating the aluminium windows / ventilators / partitions to the required micron (minimum 15), fixing to match the walls / frames, etc. concrete. Rate includes conveyance, transporting, PVC wheels, rubber, screws, cost of powder coating, labour charges, etc., complete as per instructions of Engineer-in-charge.		Sqm	

Sl. No.	Qty.	Description of work	Rate (both in figures and in words) Rs. P.	Unit	Amount Rs. P.
17	1190.00	Providing polyester sun control film of approved brand (GARWARE or equivalent) and shade to glazed panels in doors / windows / ventilators / partitions etc., with proper adhesive, all after removing the existing damaged film if available etc. complete. All as per instructions of Engineer in charge. Rate includes cost of all materials, scaffolding charges, labour, all other incidentals etc., complete. Non reflective Type - Regular grade		Sqm	
18	8450.00	Providing false ceiling at all heights with 12-14mm thick, acoustic tiles of Armstrong or equivalent specification including providing and fixing frame of grid size 610mmx610mm using GI sections of main tees of size 24mm x 35mm, cross tees of size 24mm x 27mm, wall angles 19mm x 19mm, suspended by hangers of commercial ceiling angles or equivalent from the RCC roof or trusses etc. complete. Additional hangers and height adjustment clips shall also to be provided wherever light fixtures / AC grills / diffusers are flush to the ceiling frame work and the Armstrong boards have to be made alright accordingly, Rate to include cost of all materials involved including suitable fasteners, screws etc., labour charges and all other incidentals etc. Complete. All as per standard specification and instruction of Engineer in – charge.		Sqm	
19	850.00	Providing DECOCEIL boards false ceiling with NCL seccolor exposed T & L grid system at the required heights above floor level, all as per standard specifications and instructions of Engineer-in-charge. FRAME WORK: The frame work will consists of NCL Seccolor or any other equivalent approved brand of exposed grid system using roll formed hot dipped galvanised steel sections, exposed surfaces chemically cleaned, capping pre-finished in baked polyester paint of		Sqm	

Sl. No.	Qty.	Description of work	Rate (both in figures and in words) Rs. P.	Unit	Amount Rs. P.
		cleaned, capping pre-finished in baked polyester paint of approved shade of T section 25 x 38 mm, 1.20 mm thick and L section 25 x 25 mm, 0.80 mm thick. The frame grid shall be of size 610 x 610 mm. Grids are to be suspended by 6 mm M.S rods or GI wire from the RCC roof or trusses at suitable intervals (not more than 1200 mm) or as per manufacturer's recommendation. The suspenders along with spring steel 'U' clip allowing final level adjustment are to be fixed in the RCC roof or trusses by using metal fasteners, etc. Suitable T / wall angles are to be used wherever necessary such as near walls, columns, light fixtures, A.C. grills etc.			
		CEILING: The DECOCEIL ceiling board of 3.20 mm thick with required patterns and sizes, painted with one coat of primer on both sides. Panels shall be placed in position and held by suitable spring clips, headless nails with the G.I. grid frames. Wherever light fixtures and A.C. grills / diffusers are flush to the ceiling, the ceiling board has to be cut accordingly. Rate includes cost of all materials, labour, tools, scaffolding, taxes, duties etc., complete. Payment will be made based on the actual surface area of work done			
20	1500.00	Supplying and fixing of vertical Venetian blinds 100mm wide with dual colour of approved make (Hunter Douglas make or equivalent) and shade and / as decided by BHEL - for windows / ventilators. Rate inclusive of cost of all materials, labour for fixing and incidentals etc., complete.		Sqm	
21	270.00	Supply and fixing horizontal Venetian blinds of approved make and shade with powder coated, stove enameled aluminium imported flats of 25 mm width, polyester braided ladder web, chrome plated crash proof cord lock, anodized aluminium head rail and bottom rail with tilt rod system and complete fittings, etc.		Sqm	

Sl. No.	Qty.	Description of work	Rate (both in figures and in words) Rs. P.	Unit	Amount Rs. P.
22	1175.00	Plastering with cement mortar 1:5, 12mm thick as per standard specifications.		Sqm	
23	300.00	Plastering with cement mortar 1:4, 20mm thick as per standard specifications.		Sqm	
24	7850.00	Applying two coats of Alltek Superfine (interior plaster) putty to a thickness of 2mm over plastered surface including sand papering and preparing the surface smooth and there after applying one priming coat of Alltek primer and two coats of plastic emulsion paint of approved brand and shade, all as per instructions of Engineer-in-charge.		Sqm	
25		White washing on surfaces using Janathacem or equivalent material to give an even shade including cleaning, brushing of walls and preparing surfaces in accordance with standard specifications. Rate includes cost of all materials, labour, curing etc., complete.			
a)	3000.00	Three coats		Sqm	
b)	6850.00	Two coats		Sqm	
26	400.00	Distemping using oil bound washable distemper of approved brand and shade on surfaces including cleaning, brushing, preparing the surfaces even and sand papered smooth in accordance with standard specifications. Two coats.		Sqm	
27	300.00	Polishing with french polish including a coat of wood filler to give an even surface, including cleaning the surfaces of all dirt, dust and sand papered smooth, all as per standard specifications. Two coats.		Sqm	

Sl. No.	Qty.	Description of work	Rate (both in figures and in words) Rs. P.	Unit	Amount Rs. P.
28	300.00	Painting with synthetic enamel paint of approved brand and shade on surfaces to give an even shade including cleaning the surfaces of all dirt, dust and other foreign matters, sand papering and stopping, all as per standard specifications. Two coats .		Sqm	
29		Painting with ready mixed plastic emulsion paint of approved brand and shade on surfaces to give an even shade including thorough scraping, removal of dirt, applying necessary plaster of Paris, putty etc., complete, all as per standard specifications.			
a	350.00	Three coats (A priming coat with approved primer and two coats of plastic emulsion paint).		Sqm	
b	400.00	Two coats		Sqm	
30	1550.00	Removing dry or oil bound distemper / water proofing cement paint / paint by scraping, sand papering and preparing the surfaces smooth including necessary repairs to scratches etc., complete.		Sqm	
31	400.00	Painting with exterior emulsion paint (ACE or any other equivalent and approved brand) of approved shade on surfaces to give an even shade including preparing the surfaces, removal of dirt, thorough cleaning by watering etc., all as per standard specifications. Rate includes cost of necessary plaster of paris and putty wherever required, labour and all incidentals etc., complete. Two coats.		Sqm	

Sl. No.	Qty.	Description of work	Rate (both in figures and in words) Rs. P.	Unit	Amount Rs. P.
32	225.00	Providing wall cladding out of 3mm thick exterior grade aluminium composite panel with 2" x 1" & 1" x 1" x 1.2mm aluminium channels and weather proof silicon sealants for pillars of circular and rectangular sections and walls. The rate quoted shall include cost of all labour, materials with wastages, scaffolding, sheet bending cost for circular/ rectangular pillars / plain area, all other incidental charges etc. complete. The work shall be carried out as per the direction of the Engineer-in-charge. Circular / Rectangular pillar area.		Sqm	
33	10.00	Providing structural glazing out of NCL Seccolor pre-painted GI sections, stainless steel glass holding sections, EPDM gaskets and weather proof silicon sealants and 5mm thick reflective glass. The rate quoted shall include cost of all labour, materials with wastages, scaffolding, all other incidental charges etc. complete. The work shall be carried out as per the direction of the Engineer-in-charge.		Sqm	
34	30.00	Providing back up vertical support for cladding & glazing out of NCL seccolor pre-painted steel box sections of 33x57x0.6mm with 1mm stiffener. The rate quoted shall include cost of all labour, materials with wastages, scaffolding, all other incidental charges etc. complete. The work shall be carried out as per the direction of the Engineer-in-charge.		RM	
35	10.00	Supply and fixing in position of galvanized iron plain sheets of 0.50 mm thick for flashing using G.I bolts, nuts, limpet washers etc. complete, bent to shape and fixed in wall. All as per drawings and specifications.		Sqm	

Sl. No.	Qty.	Description of work	Rate (both in figures and in words) Rs. P.	Unit	Amount Rs. P.
36		Conveyance of earth, sand, gravel, rough stone, broken stone, brick bats (debris) etc. by contractor's own lorry including loading, leading, unloading, stacking or spreading, all as per instructions of Engineer-in-charge. Payment for conveyance of earth will be made based on pit measurement and for other items based on stack measurements.			
a	300.00	0 - 1 Km		Cum	
b	545.00	Beyond 1 Km but upto 2 Km		Cum	
c	125.00	Beyond 2 Km but upto 3 Km		Cum	
37	20.00	Providing and fixing Hunter Douglas Duette honey comb blinds of approved colour and shade for windows, with seamless fabrics in 3/8" fleets with opaque opacity and honey comb construction suspended from powder coated aluminium top channel of size 1½" x 1"x 1mm with ultra glide operating system (fixed chord length and retractable) for lifting and dropping the blinds. All as per manufacturer's specifications and instructions of Engineer-in-charge.		Sqm	
38	20.00	Supplying and fixing NCL seccolor double glazed windows with 600mm wide openable shutter and the remaining width with fixed glazing. made out of 0.50mm thick roll formed galvanized and powder coated steel sections (Base steel as per IS:513D quality galvanized as per IS: 277 with zinc of 120gsm and powder coating with pure polyester powder up to 50 to 60 microns) with sections of 46mm x 52mm for external frame, 46mm x 46mm for shutter frame & 46mm x 70mm for mullions and 18mm x 25mm glazing clips, aluminium powder coated handles, EPDM gaskets, CRCA zinc phosphated corner brackets, glass filled nylon mullion caps and insulating double glass unit of 20mm thick (5mm clear plain glass + 10mm vacuum gap + 5mm clear plain glass). The scope includes fixing of windows by using nylon caps and screws. All as per manufacturer's specifications and instructions of Engineer-in-charge.		Sqm	

Sl. No.	Qty.	Description of work	Rate (both in figures and in words) Rs. P.	Unit	Amount Rs. P.
39	250.00	Providing and fixing LUXLON perforated corrosion resistant aluminium alloy (AA 3105) metallic false ceiling system of approved colour and shade consisting of clip-in tiles 600mm x 600mm x 0.70mm thick (TCT) with beveled edge coil coated on a continuous paint line with perforations of size 2.50mm dia. at 5.5mm pitch having 16% open area with acoustical felt . The tiles are clipped with galvanized steel clipping profile 20mm wide and 40mm thick suspended from roof by using GI suspension rods of 4mm dia. and galvanized suspension spring clips at a distance of 1200mm c/c. The edges of wall are fixed with powder coated GI wall angles of size 23mm x 23mm x 1mm. All as per manufacturer's specifications and instructions of Engineer-in-charge.		Sqm	
40	195.00	Supply and laying of vinyl flooring with 3mm thick "K3" wood plank designed vinyl tiles made out of decorative and laminated PVC tiles having wear layer of 0.03mm and weight of 5.36 kg / Sqm. The tiles have to be fixed with rubber based adhesive. All as per manufacturer's specifications and instructions of Engineer-in-charge.		Sqm	
				TOTAL	_____

(RUPEES only)					