

**Bharat Heavy Electricals Limited**  
**High Pressure Boiler Plant**  
**Tiruchirappalli – 620 014. India**  
**Civil Engineering Department (Factory)**

**TENDER DOCUMENT (PRICE BID)**

**Name of work** : Toilet Modifications in various locations at BHEL, Tiruchy.

**Value of work** : Rs. 50.00 Lakh

**Tender Notice No.** : 08/10-11

**Tender Schedule No.** : 23/10-11

**Period of Contract** : 15 Months

**Issued to** :

**SCHEDULE 'A'**

**LIST OF WORKS AND PRICES**

**NAME OF WORK: Toilet Modifications in various locations at BHEL, Tiruchy.**

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.	<b>Toilet Modifications in various locations at BHEL, Tiruchy.</b>	<b>50,00,000/-</b>		<b>FIFTEEN (15) MONTHS</b>

**BILL OF QUANTITIES**

Sl. No.	Appx. Qty.	Description of work	TNBP No.	Rate (Both in Unit fig & Words)	Amount	
					Rs.	Ps.

AS PER SEPARATE SHEETS ATTACHED CONTAINING **15** PAGES

FROM SERIAL No. **3 to 17**

CONTRACTOR

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BHARAT HEAVY ELECTRICALS LIMITED  
TIRUCHIRAPPALLI - 14

BILL OF QUANTITIES

**NAME OF WORK:** Toilet Modifications in various locations at BHEL, Tiruchy.

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
1	1610	Earthwork excavation (TRENCHES) in soils given below by mechanical means (Hydraulic excavator)/manual means and depositing the excavated earth at suitable places within the initial lead of 50 meter and initial lift of 1.5 meter for foundation in building works, roads, narrow drains, sewers, bridges, pipe lines etc., sectioning the subgrade to proper level and grade, watering and consolidating the subgrade to receive concrete bed, all as per standard specifications and instructions of Engineer-in-charge. <u>Rate also includes bailing or pumping out water during excavation due to subsoil water, rain etc.</u> All kinds of soil except rock.		Cum	
2	35	Supply and filling with river sand in foundation, plinth, under floor etc. including watering, ramming, consolidating and dressing complete.		Cum	
3	1400	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundation etc. in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead upto 50 m and lift up to 1.5 m etc. complete.		Cum	

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Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
4	63	Providing and laying in position plain cement concrete of specified grade including consolidation, curing etc. complete, all as per standard specifications. All works upto plinth level. Rate excludes cost of centering and shuttering. 1:4:8 with graded stone aggregate 20 mm nominal size.		Cum	
5		Providing and laying in position specified grade of reinforced cement concrete including vibration charges, curing etc. complete but excluding cost of centring, shuttering, finishing and reinforcement.			
a)	35	1:2:4 with graded stone aggregate 20 mm nominal size - All works upto plinth level.		Cum	
b)	63	1:2:4 with graded stone aggregate 20 mm nominal size - Above plinth to floor five level.		Cum	
6	7	Straightening, cutting, bending, placing in position of MS/CTD bars and binding with MS binding wires of 18/20 gauge etc. for reinforcement of RCC works. Rate includes cover blocks, cost of binding wire , conveyance of MS/ CTD bars from BHEL stores to site of work, labour etc. complete. MS/CTD bars will be supplied by BHEL at Stores at free of cost.		MT	

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Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
7		Centring and shuttering including strutting, propping, assembling etc. and removal of form work. Upto a maximum height of 4.50 metre of each floor and also upto floor five level.			
a)	105	Foundations, footings, bases of columns, equipment foundations, precast slabs, kerbs etc. for mass concrete.		Sqm	
b)	350	Suspended floors, roofs, landings, balconies, access platform and sunshades.		Sqm	
c)	280	Lintels, beams, plinth beams, girders, bressumers and cantilevers.		Sqm	
8	35	Providing precast cement concrete Jali 1:2:4 using graded stone aggregate 6 mm nominal size with suitable reinforcement including centring and shuttering, roughening, cleaning, fixing and finishing in cement mortar 1:3 etc., complete. Rate excludes reinforcement steel & fabrication charges. 50 mm thick.		Sqm	
9	140	Random rubble masonry in foundation and basement in the mix given below including simultaneous flush pointing, all as per standard specifications. Cement mortar 1:5		Cum	

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Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
10	210	Brick work with F.P.S bricks (second class ground moulded chamber bricks) of class designation 50/75 in foundation and plinth in: Cement mortar 1:5		Cum	
11	175	Extra for Brick work in superstructure above plinth upto floor three level in all shapes and sizes.		Cum	
12	0.35	Providing best wooden frames for doors, windows, ventilators and other frames, wrought framed and fixed in position. All as per standard specifications and drawings. Rate includes cost of wood, holdfasts, other materials, labour etc. complete. In Teak wood .		Cum	
13	17.5	Manufacture, supply and fixing in position of 35 mm thick fully panelled best wooden door shutters. All as per standard specifications & drawings. (Excluding door frame) Rate excludes furniture fittings. In Teak wood (single leaved shutter).		Sqm	
14		Supply and fixing the following furniture fittings of approved brand and quality (ISI marked) in the appropriate position of doors, windows, ventilators, cupboards etc. with appropriate screws, nails etc., all as per standard specifications and instructions of Engineer in charge.			
a)	7	Hydraulic door closer - universal type ( Heavy duty)		Each	

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Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
b)	14	D type Anodised Aluminium handle - 100 mm		Each	
c)	7	300 x 11/12 mm Anodized Aluminium tower bolt.		Each	
d)	14	200 x 11/12 mm Anodized Aluminium tower bolt.		Each	
e)	21	150 mm oxidised iron butt hinges (Heavy duty).		Each	
f)	14	150 x 11/12 mm Anodized Aluminium tower bolt.		Each	
15	70	Supply and fixing SINTEX (superior variety) or equivalent 40 mm thick polymer door with frame, all as detailed below:- Supply and fixing of polymer doors of required overall size (single leaf) with polymer door frame and polymer shutter (superior variety). The door frame of 60 mm thick made out of superior quality polymeric material to IS: 10151-1982. The door frame is made of		Sqm	

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Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
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Rigid Thermo Vinyl Polymer extruded section having overall dimension of 60 x 50 mm with wall thickness not less than 2.5 mm. Corners of door frame to be mitre cut and mechanically fastened or thermally welded. The corners of the door frame shall be reinforced with special polymeric 'L' corners in case of mechanically fastened the hardware position shall be reinforced with special polymeric rods of suitable size special EPDM gaskets shall be provided along with the frame. The door shutter of 40 mm thick made out of one – piece moulded superior quality Rigid Thermo Vinyl Polymer Extruded sections with overall thickness of 40 mm conforming to IS 10151-1982. The door shutter is made out polymeric extruded sections in the configuration of 'C' and the overall dimension of the same is 25 x 40 mm with a wall thickness not less than 2.0 mm.

The shutter frame is mitred and joined at the corners by means of high quality stainless steel / aluminium screws. All the corners of the shutter frames were being reinforced by high quality polymeric reinforcement to avoid any type of corrosion (or) rusting. The infill of the door shutter is consist of a seamless one piece multi chamber hollow extruded Rigid Thermo Vinyl Polymer section of size 762 x 35 mm or less as per requirement with an average wall thickness not less than 1.0 mm. The infill panel to further has a specific pre-laminated finish on either side with glass and to have all polymeric reinforcement

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
16	336	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 to 18 mm thick, polished - Gray colour.		Sqm	
17	630	Providing and laying 7mm thick (approximate) ceramic glazed wall tiles of first quality of approved make confirming to IS:15622 and in all colours of required sizes in skirting, walls, risers of steps and dado laid over a bed of cement slurry @ 3.30 Kg/SQM and a backing layer of 12 mm thick cement mortar 1:3 plaster and joined with white cement using appropriate colour pigment etc., complete, all as per standard specifications.		Sqm	
18	21	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. Marble slabs 16 to 18 mm thick, polished - Rajnagar plain white.		Sqm	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
19	35	Providing weathering course on top of roof slab with 20 mm size brick jelly and pure lime (no sand) in the proportion of 32 : 12.5 to the required thickness, well beaten with wooden battens, so as to secure adequate slope, all as per standard specifications and instructions of Engineer-in-charge.		Cum	
20	350	Providing weathering course on top of roof slab with one course of split tiles or pressed flat tiles of 17 to 20 mm thick and of approved brand & size, set in cement mortar 1:3 with an admixture of crude oil at 10% by weight of cement, 12 mm thick bedding layer including pointing the tiles with the same oiled mortar etc., complete, all as per standard specifications.		Sqm	
21	2100	Plastering with cement mortar as per standard specifications. In Cement mortar 1:5, 12mm thick		Sqm	
22	105	Damp proof course with cement mortar 1:3, 20 mm thick mixed with an admixture of crude oil at 5 % by weight of cement, all labour etc. complete as per standard specifications.		Sqm	
23	875	Painting three coats 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.		Sqm	

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Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
24	700	Painting two coats 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.		Sqm	
25		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)	35	Brick work in cement mortar		Cum	
b)	35	RCC or PCC (Using jack hammer for pockets / cable trenches / industrial heavy duty flooring)		Cum	
c)	70	W.B.M road.		Cum	
26		Providing and fixing G.I pipes and specials (B - Class) of approved brand with G.I fittings and clamps on walls and floors, including cutting and making good the walls and floors etc. complete. (Internal work - exposed on walls)			

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
a)	140	13 mm dia. nominal bore.		RM	
b)	175	20mm dia. nominal bore.		RM	
c)	245	25mm dia. nominal bore.		RM	
d)	210	50mm dia. nominal bore.		RM	
27	350	Providing and laying G.I pipes and specials (B - Class) of approved brand with G.I fittings in trenches. (External work) Earth work excavation for trenches and refilling will be paid separately. 50 mm dia nominal bore.		RM	
28		Providing and laying PVC water pipes and specials conforming to ISS in trenches, joining with proper adhesive as suggested by manufacturers etc. complete. (External work) Earth work excavation for trenches and refilling will be paid separately.			
a)	175	PVC Pipe 63 mm OD (6 kg/Sq.cm)		RM	

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Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
b)	140	PVC Pipe 75 mm OD (6 kg/Sq.cm)		RM	
c)	350	PVC Pipe 110 mm OD (6 kg/Sq.cm)		RM	
d)	700	PVC Pipe 160 mm OD (6 kg/Sq.cm)		RM	
29		Providing and fixing in position of brass wheel valve / gate valve of approved brand with C.I wheel etc. complete. (ISI marked)			
a)	70	14 to 25 mm nominal bore		Each	
b)	21	50 mm nominal bore		Each	
30	35	Providing and fixing in position brass bib cock / stop cock (Medium Duty) of approved brand (ISI marked). 15 mm nominal bore.		Each	

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Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
31	70	Providing and fixing in position 15 mm nominal bore C.P brass long nose bibcock / C.P brass stop cock (concealed) of approved brand (ISI marked)		Each	
32	14	Providing and fixing in position 100 mm dia C.P brass shower rose (tilting type) of approved brand with 15 or 20 mm dia inlet.		Each	
33	14	Providing and fixing 600 x 450 x 5 mm bevelled edge mirror of superior glass (approved brand) mounted on 5/6 mm thick hard board / ply wood / plastic folder sheet, fixed to wooden cleats with C.P brass screws and washers, etc. complete.		Each	
34	35	Providing and fixing in position of 100 x 75 mm Nahani trap with PVC grating, all as per standard specifications		Each	
35	21	Providing and fixing in position of Orissa pattern water closet of approved brand with integral type foot rests, suitable P or S trap etc. complete. 580 mm size (White) (Parryware/Neycer/Cera)		Each	
36	42	Providing and fixing in position of 25 mm nominal bore C.P half turn flush valve of approved brand (ISI marked) in pipe lines.		Each	

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Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
37	7	Providing and fixing in position of pedestal type water closet (European type W.C pan) 400 mm high of approved brand with seat and lid, C.P brass hinges and rubber buffers, 10 litre PVC low level flushing cistern with fittings and painted C.I / M.S brackets with 15 mm PVC connection, 32/40 mm PVC flush bend with fittings and clamps, over flow arrangement with specials and mosquito proof coupling including painting of fittings & brackets, cutting and making good the walls and floors wherever required etc. complete. White glazed .		Each	
38	14	Providing rectangular/circular manhole as per Drawing No.D/1016065 for the following depths. Rate includes earth work excavation in all soils (except hard rock requiring blasting) including soft disintegrated rock, watering and ramming of foundation bed, providing cement concrete 1:4:8 in foundation, including necessary slope and forming channels smoothly finished in C.M 1:2, brick work in C.M 1:5 for arch ring, etc., using standard approved bricks, plastering in cement mortar 1:4 for side walls (outside and inside), cement concrete 1:2:4 using 12 to 20 mm HBGS jelly for manhole cover fixing, providing and fixing C.I steps for ladder rungs, etc., complete. Rate includes an initial lead of 10 m and all lifts for excavation and other charges etc., complete, but excludes cost of manhole cover and frame. Above 1.50 and upto 1.80 m depth (Rectangular).		Each	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
39	14	Supply and fixing C.I cover with/without frame for manholes/gully traps. 560 mm dia C.I cover with frame. (Heavy duty) Total weight of cover and frame to be not less than 208 K.G (Weight of cover 108 K.G and weight of frame 100 K.G)		Each	
40	245	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. Beyond 1 Km but upto 2 Km .		Cum	
41	28	Supplying at site of work and fixing in position of white glazed earthenware Elegant 'JAMBO TYPE' long size urinal of Parry ware or equivalent make including supply and fixing of CP spreader, PC lead connection, waste coupling, CP flange, fixing brackets and PVC bush etc., complete. The rate is inclusive of conveyance of all the above materials to site of work labour for carrying to spot and fixing with necessary screws etc., complete. All as per standard specifications and instructions of Engineer-in-charge.		Sqm	
42	14	Providing, laying and finishing the top of counter wash basin with best quality granite slab of 18 to 20 mm thick over a bedding layer of CM 1:3, 25mm thick finished with flush pointing in white cement using appropriate colour pigment etc. Rate shall include cutting charges for the required shape, cutting oval shape holes for fixing wash basins, providing holes for fixing tap, nosing and edge polishing etc., complete and all as per standard specifications and instructions of Engineer-in-charge. <b><u>Steel Grey / P.White.</u></b>		Sqm	

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Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Total Rs. P.
43	22.68	Supplying and fixing in position of aluminium louver ventilator of over all size 1.10 x 0.60m of thereabout using standard anodized aluminium sections of size 2½” x 1½” for frame confirming to IS 1948 of latest edition. The louvered glass panels shall be 5mm frosted glass panes. The ventilator should have 12 No. of louvers (6 x 2) 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 instructions of Engineer-in-charge.		Sqm	
44	14	Supplying at site of work, carrying and fixing in position of White Glazed Earthen Ware Wash hand basin of oval shape of approved make and quality (Parry ware) with necessary fixing arrangements. Rate includes cost of wash basin, labour for carrying and fixing and all other incidental charges etc. complete. All as per the instructions of Engineer-in-charge.		Each	
<b>TOTAL .. ..</b>					

( RUPEES.....)