



Issued to agency:  
**BHARAT HEAVY ELECTRICALS LIMITED**  
**RAMACHANDRAPURAM:: HYDERABAD::32**  
**FACTORY CIVIL ENGINEERING DEPARTMENT**

## SCHEDULE- A

Tender Notice No:

## PRICE BID

HY/FCD/OT-6/2008-09 , Dt: 07.08.08

Item no: 2

Name of work:- Civil works for " Cross bay for VPI plant" at 02 Block

S.No	Description of the item	Qty	Unit	Rate	Amount
<b>Part I - Civil works.</b>					
1a	<b>Earth work in excavation</b> by mechanical means (Hydraulic Excavators) / manual means in foundations trenches or drains (not exceeding 1.5m in width or 10 Sq.m on plan ) including dressing of sides and ramming of bottoms, lift upto 1.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed , within a lead of 50m.	2350.00	Cu.m	103.40	242990.00
b	----do---- up to First additional depth of 1.50 M to 3.00 M.	160.00	Cu.M	125.70	20112.00
c	----do---- up to second additional depth of 3.01 M to 4.00 M.	55.00	Cu.M	148.00	8140.00
2	Earth work in excavation by mechanical means (Hydraulic Excavators) / manual means over areas (exceeding 30 cm in depth , 1.5 m in width as well as 10 Sq.m on plan) including disposal of excavated earth , lead upto 50 m and lift upto 1.5 m, disposing earth to be levelled and neatly dressed for <b>Hard Rock</b> ( Blasting prohibited).	531.00	Cu.M	325.25	172707.75
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering including consolidation by vibrations for all works up to plinth level with <b>1:4:8</b> (1 cement : 4 coarse sand : 8 graded stone aggregate of 20 mm nominal size ).	179.00	Cu.M	2449.00	438371.00
4a	Providing and laying in position specified grade of reinforced cement concrete including consolidation by vibrations excluding the cost of centering ,shuttering and reinforcement for all works <b>up to plinth level</b> with <b>1:1½:3</b> (1 cement : 1½ coarse sand : 3 graded stone aggregate of 20 mm nominal size ).	909.00	Cu.M	3732.00	3392388.00
4b	Reinforced cement concrete work in walls (any thickness) including attached pilasters, buttresses, pinth and string courses,fillets, columns,pillars,piers,abutments,posts and struts etc., above ground level and <b>up to floor five level</b> including consolidation by vibrations excluding the cost of centering ,shuttering and reinforcement , for all works with <b>1:1½:3</b> (1 cement : 1½ coarse sand : 3 graded stone aggregate of 20 mm nominal size ).	51.00	Cu.M	4092.35	208709.85

S.No	Description of the item	Qty	Unit	Rate	Amount
5	<b>Centering</b> and shuttering including strutting, propping etc; and removal of form work, for columns, pillars, piers, abutments, machine foundations, posts and struts.	3060.00	Sq.M	238.40	729504.00
6	<b>Reinforcement for R.C.C. work</b> including straightening , cutting , bending , placing in position and binding grills with binding wire all complete by cold twisted deformed bars.	100.00	M.T	42700.00	4270000.00
7	Providing and laying in position <b>reinforced cement concrete including consolidation by vibrations</b> excluding cost of centering , shuttering and reinforcement for all works <b>upto plinth level : with 1:2:4</b> (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	244.00	Cu.M	3359.60	819742.40
8	Granolithic topping of 25 mm thick using 1 cement 1 granite chips of 10mm down graded laid over base concrete when it is green conditions and <b>ironite finishing</b> 12mm thick using a mix of 50Kg of ironite , 200 Kg of cement and 0.30 Cu.m of granite metal 6mm down graded including cost of form work , curing etc. complete.	1050.00	Sq.m	391.40	410970.00
9	<b>Flooring</b> in 25 mm thick using 1:1 granolithic flooring (1 cement : 1 parts of granite stone chips of 3 to 10 mm gauge ( no sand ) first sort including neat finishing, curing, cost of materials etc; complete.	90.00	Sq.m	206.45	18580.50
10	<b>Filling</b> with available excavated earth (excluding rock) in trenches , plinth , sides of foundations etc. in layers not exceeding 20 cm in depth , consolidation each deposited layer by ramming and watering , lead upto 50 m .	750.00	Cu.M	45.70	34275.00
11	<b>Conveyance</b> of excavated spoil up to a lead of 2 Kms, including loading , unloading and spreading etc. complete as directed by Engineer- in- charge.	1623.00	Cu.M	56.41	91553.43
12	<b>Brick work</b> with FPS bricks of class designation 75 in superstructure above plinth level up to floor V level in all shapes and sizes in cement mortar 1:6.	161.00	Cu.M	2357.40	379541.40
13	Plastering in <b>CM 1:6 , 20 mm</b> thick to internal and external surfaces of walls including the cost of all materials , labour , curing etc, complete - Upto 10.00 m height	1740.00	Sq.m	102.90	179046.00
14	Cement Plaster to <b>ceiling</b> with <b>12mm</b> thick cement plaster finished with a floating coat of neat cement of mix 1:3 ( 1 cement : 3 fine sand ) . Upto 10.00 m height	440.00	Sq.m	107.80	47432.00
15	Plastering over <b>roof slab in CM 1:4, 20mm</b> thick mixed with water proofing compound, Make: "Sika" @ 3% by weight of cement as per manufacturer's specification, curing as directed. Rate quoted shall include finishing, cost of all materials and labour etc., complete. (Cement =7.69 kgs/sq.m x3% WP@ Rs 20.00 per kg=Rs 4.61) upto 10 m height.	319.00	Sq.m	115.06	36704.14

S.No	Description of the item	Qty	Unit	Rate	Amount
16	Supplying and laying of <b>vitrified tiles</b> of brighter shades and marble design of Premium Quality (1st quality ) in required texture, design and colour, for flooring /skirting /cladding using vitrified tiles of size <b>600 x 600mmx8 mm</b> thick of approved make. It includes cost of cutting, champering of tiles to required size, with base of Conmax C - 500 tile adhesive for fixing tiles on existing mosaic/cement flooring, jointing the tiles with colour tint etc. complete as directed by Engineer-in-charge. The rate quoted shall include cost of all materials, labour, adhesives, colour tint material, leads and lifts etc. complete. Amount will be paid on the basis of measurement of the area of finished work only. It also includes surface preparation of existing ceramic floor giving necessary slopes, cleaning joints and grouting joints with pigmented additives to match shade of the tile, making pockets for electrical, communication, network cables etc. complete as directed by Engineer-in-charge. Amount will be paid on the basis of measurement for finished work only.	75.00	Sq.m	950.00	71250.00
17	Supplying and fixing <b>aluminum door</b> with single shutters made out of new anodised aluminum box section of size 44.50x 47.50x 2.00mm for verticals, top and middle rails and 101.60x44.50x2.00mm for bottom rail inclusive of supply and fixing of all aluminum fixtures and fittings such as handles 2 nos, 1 No of tower bolt 12mm dia 200mm long, 1 No of hydraulic door closure of IS specification , 3 nos of 4" long(100mm) but hinges, stopper 1 No and suitable locking arrangement etc. complete . Wherever members are joined wooden runners are to be inserted in the box section for taking hinges, tower bolts, handles, hydraulic door closure and providing necessary rubber bedding for closing of door shutters all as directed by Engineer-in - charge. The rate shall include cost of door frame using aluminium box sections of size 101.60x44.50x2.00 mm. etc. complete all as directed by Engineer in charge .	36.00	Sq.m	2918.40	105062.40
18	Providing & Fixing of top fixed, side hung of <b>NCL Secular windows</b> fabricated from Roll formed section made of pre painted steel (Base steel as per IS 513 of 0.6 mm thick, 'D' quality, galvanized as per IS 277 with zinc 150 GSM / Sq. Mtr). Section for shutter should be of 46 x 46 mm, external frame should be of 46 x 52 mm, section for glass beading should be of 18 x 25 mm & center mullion should be 46 x 70 mm. The sections to be cut to length, meter joined with corner bracket. Centre mullions are to be fixed using mullion cap. Handle made of high grade aluminium powder coated & with nylon receiver & glazed with 4 mm thick, modi float glass. Gasket made of E.P.D.M. Corner brackets made of C.R.C.A with zinc phosphating. Mullion caps made of glass filled nylon. The above frames should be fixed to the concrete / masonry walls by means of self expanding screws.	134.00	Sq.m	3000.00	402000.00

S.No	Description of the item	Qty	Unit	Rate	Amount
19	Fabrication and fixing M.S. Angles in the concrete with 10mm dia lugs welded to the M.S. Angle (Strl. Steel,electrodes and gases required for the work will be issued on free of cost by BHEL at their stores).	12.50	One MT	4000.00	50000.00
20	Fabrication and fixing inserts in concrete wall with lugs of required dia welded to the insert plates. (Strl. Steel,electrodes and gases required for work will be issued on free of cost by BHEL at their stores).	2.60	One MT	4000.00	10400.00
21	Casting and placing in position of <b>R.C.C cable trench covers of 75 mm thick</b> in mix of 1:1.5:3 using 20 mm down graded metal including cutting, welding of Angle iron frame, cost of MS reinforcement as specified including cutting bending , binding wire, spreading of Ironite powder at 2 Kg / Sq.m, neat finishing ,cost of labour, etc complete as directed. (MS angles, electrodes only will be issued on free of cost by BHEL at their stores).	260.00	Sq.m	1002.00	260520.00
22	Providing and fixing in true horizontal level 600 mm x 600mm false ceiling system manufactured by M/s. <b>Armstrong</b> World Industries using DUNE SUPREME RH 99 MICROLOOK EDGE WITH SILHOUETTE GRID, using hot dipped galvanized steel section, rotary stitched main tee of size 15mm x 42 mm web height, having 0.36 mm gauge at every 600 mm centre to centre maximum and rotary stitched cross tee of size 15 mm x 42 mm, having 0.33 mm gauge at every 600 mm. c/c. and wall angle of size 19 x 19 mm., having 0.35 mm gauge fixed to the periphery of the wall. The above grid is suspended at every 600mm c/c. in both directions using 2.0 mm. thick pre-straightened GI wire, and laying Dune Supreme Microlook Edge ceiling tiles manufactured by M/s. Armstrong World Industries, of size 600mmx600mmx15mm having NRC 0.50, Light reflectance of >85% (WT), thermal conductivity k = 0.052-0.057 W/mOK, Humidity Resistance of 99% (having LIFETIME GUARANTEE against SAG), having Fire Performance CLASS O / CLASS 1 (BS 476), surface having 3 coats of white paint - crisp finely granulated with microperforations, back of the tile duly sanded and finished with a coat of protective paint over the formed grid and complete in all respects. Boards, where light fixtures to be fixed shall be handed over to Department. Make: Armstrong	60.00	Sq.m	1130.00	67800.00

S.No	Description of the item	Qty	Unit	Rate	Amount
23	Providing, designing, cutting, bending and fixing Aluminium composite cladding of 4 mm thick of approved make (ALUCO PANEL/ALCO BOND/ALEX PANEL/Sunbond) on external façade of size as shown with the water tight system either curved or straight on concrete/masonry surfaces skin materials 0.25 mm thick aluminium sheet (300 5 H6) cover material natural polyethylene aluminium cladding panel of approved colour /shade fixed with excluded aluminium basis frame (50x25x1.5 mm) angle cleats , weather sealants, rivets, GI brackets all as approved, using suitable chemical/anchor bolts on structural steel works including necessary accessories complete in all respects,where ever level difference is shown dummy structural steel backup frame shall be provided including the finished surface shall be protected with 80 microns self adhesive peel of film with TWO layer of white and black tested to withstand atleast 6 months exposure to local weather conditions, without losing the original peel of characteristic or causing stains or other damages with silicon sealant of Dow carning 789 or Wacker EL 305 d including all scaffolding and labour charges etc.complete for finished item of work.	224.00	One sq m	2310.00	517440.00
24	Painting with <b>oil bound distemper 2 coats</b> to new plastered surfaces of walls, ceiling etc., complete. (O.B.D only will be issued free of cost by BHEL at their stores).	1445.00	Sq.m	17.88	25836.60
25	Applying <b>Snowcem/interior</b> emulsion paint 2 coats to external new plastered surfaces including curing etc., over a coat of primer ( paint will be issued free of cost by BHEL at their stores).	750.00	Sq.m	17.88	13410.00
26 a	Supplying , laying and jointing <b>80 mm</b> nominal bore <b>GI pipe</b> medium grade properties and weight as per IS 1239 , ISI marked with GI fittings, including cost of pipe and its fittings, labour charges, testing, etc., complete.	120.00	RM	458.15	54978.00
26 b	Supplying , laying and jointing <b>40 mm</b> nominal bore <b>GI pipe</b> medium grade properties and weight as per IS 1239 , ISI marked with GI fittings, including cost of pipe and its fittings, labour charges, testing, etc., complete.	80.00	RM	241.00	19280.00
27 a	Providing and fixing GM gate valve with C.I wheel of approved quality (screwed end) of 80 mm dia nominal bore.	3.00	Each	1369.25	4107.75
27 b	-----do -----of 40mm dia nominal bore.	8.00	Each	399.00	3192.00

S.No	Description of the item	Qty	Unit	Rate	Amount
28 a	Providing and laying S&S Centrifugally cast (Spun) / Ductile iron pipes conforming to IS: 8329 - 350 mm dia Ductile iron class K-7 pipes, including cost of pipes.	140.00	RM	3214.25	449995.00
28 b	-----do----- for 400 mm dia ductile iron class K-7 pipes.	140.00	RM	3837.60	537264.00
29 a	Providing push-on-joints to centrifugally (spun) cast iron pipes or ductile iron pipes including testing of joints and including the cost of rubber gasket : for 350 mm dia pipes.	30.00	Each joints	182.15	5464.50
29 b	----do ---- for 400 mm dia pipes.	30.00	Each joint	340.40	10212.00
30 a	providing lead caulked joints to spun iron or C.I pipes and specials including testing joints but excluding the cost of pig lead for 350 mm dia pipe.	12.00	Each joint	256.00	3072.00
30 b	-----do----for 400 mm dia pipe.	12.00	Each joint	332.10	3985.20
31 a	Dismantling old C.I pipes including excavation and refilling trenches after taking out the pipes, breaking lead caulked joints, melting of lead and making into blocks including stacking of pipes at site lead up 50 metre - for <b>350 mm diameter</b> C.I pipe.	100.00	RM	124.60	12460.00
31 b	-----do----- for 400 mm diameter C.I. Pipe.	100.00	RM	131.15	13115.00
32 a	Labour for cutting C.I pipes with steel saw for 350 mm diameter C.I pipe.	2.00	Each	129.10	258.20
32 b	- -----do----for 400 mm diameter C.I pipe	2.00	Each	147.70	295.40
33 -a	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement :2 fine sand) including testing of joints etc. complete - 250mm dia R.C.C pipe.	55.00	RM	258.20	14201.00
33- b	-----do ----for 300 mm dia RCC pipe.	45.00	RM	338.75	15243.75
34	Supply of pig lead	250.00	Kg	58.00	14500.00
35	Supply of spun yarn	120.00	Kg	30.00	3600.00
36	Finishing with <b>Epoxy paint ( two or more coats) of ASIAN or BERGER make</b> at all locations prepared and applied as per manufactures specifications including appropriate priming coat , preparation of surface , cost of all materials etc; complete on concrete work.	1080.00	Sq.M	77.75	83970.00

S.No	Description of the item	Qty	Unit	Rate	Amount
37	Construction of Rectangular Manhole of inside dimensions 1.20 x 0.90 M including Earth work, bed concrete 1:2:4 – 200 mm thick, walls with C.R.S Masonry 2 <sup>nd</sup> sort in C.M (1:6) of 0.45 M width, plastering walls inside, out side with C.M (1:4) / 20 mm channeling, inside manhole neat finishing, fixing C.I Foot steps at 400 c/c. Fixing of Angle iron frame with 75 x 75 x 6 lugs welded in C.C 1:2:4 on top of wall of 10 cms thick including back filling etc., complete. including casting & placing inposition of RCC cover for the manhole. (M.S. Angle, will be issued free of cost). - Manholes upto 1.50M depth.	6.00	Each	12,000.00	72000.00
38	Providing STP make 12 mm thick mastic pad of 240 mm depth in flooring expansion joints.	50.00	Sq.M	416.75	20837.50
39	Providing and filling 12 mm width 10 mm depth with hot bitumen 30 / 40 grade at construction joints.	240.00	One RM	5.36	1286.40
40	Supply and fixing aluminium composite panel (ACP) 4 mm thick of approved make in required colours for exteriors, consisting of two layers of aluminium skins of 0.25 mm thick sandwiching a thermo plastic core in continuous lamination process with PVDF resign coating for exterior grades ensuring long colour and no fungal attacks. The above panels shall be fixed on structural steel arches provided for shop entrances. It includes cost of labour, materials accessories adhesives, scaffolding wastages, transport, taxes fixing into a neat finish in a esthetic point of view without any undulations in faces.	25.00	Sq.M	2991.00	74775.00
41	Supply and fixing of required letters in required colours, sizes,three languages and numericals as embossing with aluminium composite panel (ACP) 4 mm thick in required colours for exteriors consisting of two layers of aluminium skins of 0.25 mm thick sandwiching a thermo plastic core in continous lalminations process with PVDC resin coating of exterior grades ensuring long colour and no fungal attacks The above letters shall be fixed on back ground base panels as specified by Engineer-in-charge. Drawings with detailed measurements of letters, sizes are enclosed for reference. It includes cost of labour, materials accessories, adhesives, scaffolding, wastages, transport taxes fixing into a neat finish in aesthetic point of view, without any undualations in facias. (payment will be measured for finished letter)	6.00	Sq.M	2991.00	17946.00
				<b>Part-I - Total: Rs</b>	<b>14460525.17</b>

S.No	Description of the item	Qty	Unit	Rate	Amount
	<b>Part II - Structural works.</b>				
1	Fabrication of structural steel work including all materials going into the process of fabrication and forming and integral form of steel work together with all shop and site rivets and electrodes for site welding as necessary and all site connections comprising sag rods, floor beams, girders, bracings, trusses and frame work for fixed false ceiling and for movable false ceiling, purlins with channel / angles, MS flat supports including all connections as per detailed drawings connected steel works etc., cleats, gusset plates, all bolts, nuts, washers, base plates, anchor bolts as per detailed drawings, cutting, welding and painting 2 coats of red-oxide primer before erection etc., complete. The rate shall include painting 2 coat of Red-oxide as per IS specifications and all charges for handling, leading and loading at the fabrication yard. (The raw structural steel sections, electrodes, gas only will be issued on free of cost by B.H.E.L at their stores)	142.60	One MT	10589.00	1509991.40
2	Erection of structural Steel work out lined in item No.1 above including the charges for handling, leading and stacking at site at approved locations prior to erection including all site rivetting, bolting, jointing and site welding where ever required.	142.60	One MT	1971.00	281064.60
3	Painting at site of all structural steel work with 2 coats of aluminium paint / synthetic enamel paint of approved shade to trusses, columns, girders, bracings etc., with aluminium paint or synthetic enamel paint as required etc., complete. The required paint only will be issued free of cost by B.H.E.L at their stores.	155.10	One MT	596.50	92517.15
4	Supplying and fixing of Tracdek Hi-rib single skin colour galvalume / Zinalume sheets of 0.5 mm thick. One Meter width and length upto 12 M with Factory cut and fixing to the roof shall be crest fixed to roof purlins with number 12-14 x 55 mm long polymer coated galvanized hex-head self drilling screws with integral washers and EPDM seals (4 fasteners per support) for sheet etc., compete as directed. (Including cost of galvalume sheets). - for roofing/ Cladding - Coloured	2900.00	One Sq.m	720.00	2088000.00

S.No	Description of the item	Qty	Unit	Rate	Amount
5	Supply & Installation of 0.5 mm thick colour galvalume sheet flashings hood / ridges/ triangular portion closers to require shape with self threaded screws etc. complete as directed.	925.00	Sq.M	900.00	832500.00
6	Providing and fixing <b>barge boards</b> in required girth (200 mm horizontal, 200 mm vertical) with 0.50 mm color galvalume sheets upto a length of 2.50 M, fixed to steel members with self drilling / self stitching fasteners at maximum 500 mm c/c along the length of capping, flashing etc., complete as directed by Engineer-in-charge including the cost of galvalume sheets, fixtures, fittings etc., complete.	100.00	One RM	160.08	16008.00
7	Providing and fixing MS round holding down bolts of required sizes with nuts and washer plates complete.(Only MS rods will be issued by BHEL on free of cost at their stores).The rate shall include the cost of welding, threading, bolts, nuts and washers.	0.40	One MT	21550.00	8620.00
8	Fixing 52 Kg rails for various gauges at floor level including fixing side guide angle etc., complete with necessary clamps required for fixing rails in position and alignment, leveling as per B.I.S 7215-1974. (M.S rails, M.S. Angles, Strl. steel will be issued free of cost by BHEL at their stores).Including cost of clamps,bolts & nuts etc.,	12.00	One MT	6000.00	72000.00
9	Providing and fixing 4.5 mm thick polycarbonate sheets and anodised aluminium galzing bars together with accessories complete for North light glazing including cost of all materials, labour etc., complete.	24.00	Sq.M	1200.00	28800.00
10	Fabrication and fixing in position <b>MS rain water gutter</b> made out of 2.5 mm to 3.15 mm thick MS sheet including one coat of Red-oxide to relevant IS specifications, riveting or welding the joints, making joints water tight and providing spouts wherever required and painting with two coats of aluminium paint etc., complete all as per drawing. MS sheet of 2.5 mm to 3.15 mm thick will be issued free of cost by B.H.E.L at their stores.	100.00	One RM	464.00	46400.00
11	Supplying and fixing MS medium quality pipes of 163.90 mm outer dia having thickness 4.85 mm as per IS 1239 with specials, accessories and welding in position and jointing to MS gutters , including cost of all materials labour etc., for all heights complete	6.00	One RM	1000.00	6000.00

S.No	Description of the item	Qty	Unit	Rate	Amount
12	Supplying and fixing plain PVC pipe of <b>200 mm dia</b> of approved quality with specials, accessories and approved sealing /jointing compound on the exterior of the inserted portion of the fitting and fixing in position and joing to MS gutters , including cost of all materials ,sealing compound ,labour etc., for all heights complete	92.00	One RM	568.00	52256.00
13	Providing and fixing 1mm thick MS sheet sliding - shutters with frame and diagonl braces of 40x40x6 mm angle iron, 3 mm gusset plates at the junction and corner 25 mm dia pully, 40x40x6 mm angle & T iron at the top and bottom respectively including applying a coat of primer of approved steel primer.	30.00	Sq.M	2018.70	60561.00
14	Supply and fixing of <b>Electrically operated rolling shutters conforming to as per IS 6248</b> , Shutter curtain made out of Aluminum Double Wall with 60 mm, OD " C " class Pipe, side Guide 150x2.5 mm thick Top Bracket 6 mm thick, MS Plate and Aluminum Bottom Rail 3.0 mm thick and Angle support 40x40x5 mm thick Angle End to End, Hood Cover 1.00 mm thick, Electrical Gear Operated System with 1 No of Reduxion Gear Box, 1 No Cromption Induction Motor 3 Phase(capacity of the Motor shall be suitable to the size of the doors as mentioned below) with Limit Switch and Reversible Switch make of Bharat Cutter with necessary electrcal cabling required for operation of shutter.One coat of Red Oxide paint except shutter curtain. The rolling shutter shall be provided with proper locking arrangement and shall be as per IS 6248. The rate quoted shall include cost of all materials, labour and scaffolding etc complete as directed by Engineer.The measurement will be made on finished item of the work for payment.(The shutter curtain is made out of Aluminium and all the other items are made out of MS size of the door is 5x6 M)	72.00	Sq.M	9396.00	676512.00

Part-II sub-total : Rs **5771230.15**

Total: (Part-I + Part-II)

**Rs 20231755.32**

Total: Rupees Two Crores two lakhs thirty one thousand seven hundred and fifty five only.

I / We have quoted .....% above [ ] / below [ ] (tick the relevant) for the rates given above.  
% in words:

Name of the Contractor :

Signature of the Contractor

Accounts Representative

OPENING OFFICER