



**BHARAT HEAVY ELECTRICALS LIMITED
RAMACHANDRAPURAM::HYDERABAD::32
FACTORY CIVIL DEPARTMENT**

SCHEDULE- A

Tender Notice No:

PRICE BID

HY/FCD/OT- 17 /2010-11 , Dt:- 20.09.2010

Item no : 1

**Name of work: - Construction of Record room (Ground floor + First floor) at
Admn. Building premises.**

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
	Part - I -Civil Works				
1 a)	Earth work in excavation in all soils 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.	240.00	Cu.m	103.40	24816.00
1 b)	---do --- up to First additional depth of 1.50 M to 3.00 M.	105.00	Cu. m	122.30	12841.50
2	Earth work in excavation in all soils by mechanical means (Hydraulic Excavators) / manual means over areas (exceeding 30 cm in depth, 1.50 m in width as well as 10 Sq.m on plan) including disposal of excavated earth, lead upto 50 m and lift upto 1.5m, disposing earth to be levelled and neatly dressed for Hard Rock (Blasting prohibited).	10.00	Cu. m	325.25	3252.50
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 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate of 20 mm nominal size).	60.00	Cu. m	2449.00	146940.00
4	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering, shuttering, finishing and reinforcement, including consolidation by vibrations for all works up to plinth level with 1:1½ :3 (1 cement : 1½ coarse sand : 3 graded stone aggregate of 20 mm nominal size).	120.00	Cu. m	3732.00	447840.00
5	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering, shuttering, finishing and reinforcement, including consolidation by vibrations for all works up to floor five level with 1:1½ :3 (1 cement : 1½ coarse sand : 3 graded stone aggregate of 20 mm nominal size).	287.00	Cu. m	4092.35	1174504.45

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
6	Reinforcement for R.C.C. work including straightening , cutting , bending , placing in position and binding all complete by cold twisted bars.	32.56	M T	42700.00	1390312.00
7 a)	Centering and Shuttering (upto plinth level) including strutting, propping etc; and removal of form work, for columns, pillars, peirs, abutments, machine foundations, posts and struts.	590.00	Sq. m	180.40	106436.00
7 b)	Centering and Shuttering (upto floor five level) including strutting, propping etc; and removal of form work, for columns, pillars, peirs, abutments, machine foundations, posts and struts.	2170.00	Sq. m	238.40	517328.00
8	Plastering over roof slab in CM 1:4, 20 mm thick mixed with water proofing compound, Make: "Sika" @ 3% by weight of cement as per manufacuterer's specification, curing as directed. Rate quoted shall include finishing, cost of all materials and labour etc. complete. (Cement = 7.69 Kg/sq. m x 3% WP @ Rs. 20.00 per Kg = Rs. 4.61) upto 10 m height.	420.00	Sq. m	115.06	48325.20
9	Brick work with FPS bricks of class designation 75 in superstructure above plinth level up to ground floor in all shapes and sizes in cement mortar 1:6.	170.00	Cu. m	2463.60	418812.00
10	Plastering in CM 1:6 , 20 mm thick to internal and external surfaces of walls including the cost of all materials, labour, curing etc, complete - Upto 10.00 m height	1900.00	Sq. m	95.10	180690.00
11	Finishing the top of the concrete flooring in CM 1:3, 15mm thick including neat finishing, curing etc; complete.	1320.00	Sq. m	122.50	161700.00
12	Flooring in 25 mm thick using 1:3 (1cement : 3 parts of granite stone chips of 3 to 10 mm guage (no sand) ellies pattern first sort including neat finishing, curing, cost of materials etc; complete.	840.00	Sq. m	196.00	164640.00
13	Fixing standard steel glazed doors, windows and ventilators in walls with 15 x 3 mm lugs 10 Cm long embedded in cement concrete blocks 15 x 10 x 10 cm of 1:3:6 (1 Cement : 3 Coarse Sand : 6 graded stone aggregate 20 mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including fixing of float glass panes with glazing clips and special metal-sash putty of approved make, or metal beading with screws (only steel windows with lugs, glass panes cut to size and glazing clips or metal beading with screws, shall be supplied by BHEL at free of cost).	2000.00	KG	23.20	46400.00

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
14	Fixing of 3 mm glass of plain / opeque / pin headed etc with MS glazing clips and putty at all floors of buildings. The rate quoted shall include removal of broken glasses, cleaning old putty etc., complete from the old windows / partitions at all heights of the buildings, as directed by Engineer-in-charge.	80.00	Sq. m	284.20	22736.00
15	Providing and fixing 1 mm thick MS sheet door with double shutters with frame and diagonal braces of 40 x 40 x 6 mm angle iron, 3 mm gusset plates at the junction and corners, all necessary fittings complete, including applying a coat of approved steel primer.	23.00	Sq. m	1695.40	38994.20
16	Supplying & fixing plain PVC pipe of 110 mm dia (as per IS 4 Kg/Sq.m) 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 joining to MS gutters, including cost of all materials, sealing compound, labour etc. for all heights complete.	96.00	R M	99.22	9525.12
17	Applying exterior emulsion paint 2 coats to external new plastered surfaces including curing etc., over one coat of primer (paint will be issued free of cost by BHEL at their stores).	3220.00	Sq. m	28.20	90804.00
18	Applying two or more coats of synthetic enamel paint of given shade to old steel work including scraping old surfaces, cost of all labour, tools and other incidentals etc.complete.(Only Synthetic enamel Paint will be supplied by BHEL)	160.00	Sq. m	28.50	4560.00
20	Filling 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 50.00 m and lift upto 1.50 m.	235.00	Cu. m	45.70	10739.50
19	Conveyance of excavated soil upto a lead of 2 Kms, including loading, unloading and spreading etc. complete as directed by Engineer-in-charge.	106.00	Cu. m	56.41	5979.46
20	Coursed rubble masonry (second sort) with hard stone in foundations & plinth with cement mortar 1:6 (1 Cement : 6 Coarse sand).	25.00	Cu. m	1913.10	47827.50

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
21	Supply & fixing of aluminium door with single/double shutter made out of anodised aluminium box section powder coated in required colour of size 101.60 x 44.45 x 2.00 mm for verticals, top and bottom horizontals at spacing suiting to the site requirements as approved and door frame of size 101.60 x 44.45 x 2.00 mm for vertical and top horizontal, inclusive of supply and fixing all aluminium fixtures and fittings. Providing and fixing of 12mm toughened glass for door frame and door hardwares with DORMA/OZONE make like floor springs, PIVOT patch fittings, bottom locks, D-Handles, and frosted film with specified design etc. complete as directed by Engineer-in-charge. The rate shall include cost of all materials, glass, door hardwares, labour charges etc. complete.	12.50	Sq. m	10000.00	125000.00
22	Supplying and fixing of MS Single door of Shakti make as per the specification attached.	5.00	Sq. m	6799.85	33999.25
23	Providing precast cement concrete Jali 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6 mm nominal size) reinforced with 1.6 mm dia mild steel wire including centering and shuttering, roughening, cleaning, fixing and finishing in cement mortar 1:3 (1 cement: 3 fine sand) etc. complete excluding plastering of the jambs, sills and soffits - 50 mm thick	68.00	Sq. m	359.20	24425.60
24	Fixing of weldmesh / expanded metal to angle iron frame of suitable size for RCC louvers/ceiling including gas cutting and welding as directed by the Engineer-in-charge. (M.S. angle iron frame, weldmesh/expanded metal will be supplied by BHEL at their stores at free of cost).	100.00	Sq. m	69.65	6965.00
25	Supply & fixing of "Parryware" make ceramic oval shape below counter wash basin size 550 mm x 450 mm, Code No. 0418, regular in colour (Ivory) with all accessories like brackets, screws, waste coupling half thread / full thread, connecting hose 2' etc complete.	1.00	Each	2024.00	2024.00
26	Supply & fixing of new "Parryware" make Indian Water Closet, Orissa Pan size 580 mm x 410 mm open rim (Code No. C0109) with P/S trap box rim with internal foot treds including ceramic low level flushing cistern 10 liters capacity with Parryware wonder flush kit, regular in colour with all required accessories etc complete.	1.00	Each	4261.00	4261.00

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
27	Supply & fixing of new "Parryware" make, ceramic Urinary Pans Model (Cat 0575) "New Magnum Urinal" size 600 mm x 400 mm along with all accessories, CP spreader brackets etc. regular in colour along with partition for Magnum Urinal ceramic, 'Z' type brackets to be screwed to the wall at the bottom size 810 mm x 390 mm in regular colour etc complete.	1.00	Each	3933.00	3933.00
28	Supply and fixing of "Jaquar" make Pressmatic pillar cock auto closing system, Cat No. 031	1.00	Each	1400.00	1400.00
29	Supply & fixing "Marc" make brass bib cocks with all accessories.	1.00	Each	506.00	506.00
30	Supply and fixing of "Jaquar" make angular stop cock, Cat No. 053	1.00	Each	495.00	495.00
31	Supply & fixing coloured glazed tiles of required make ceramic tiles of Premium (First) quality of required size and of approved shade and design, for walls/flooring over a base of CM 1:4, including neat finishing and jointing etc. complete. (Corners are to be joined by mitering the tiles). The cost of the tile shall be Rs. 70/- per S Ft. The make, design and colour of tile will be selected by department within the above specified cost. The rate quoted shall also include the cost of all materials, labour etc. complete. Payment will be made for finished item of work only.	60.00	Sq. m	764.00	45840.00
32	Providing and fixing shutters along with frames for toilets that are 30 mm thick factory made PVC rigid foam paneled door, shutters manufactured by M/s. Rajashri made from M.S. tube or 19 gauge thickness, size 19x19mm for styles and 15x15mm for top and bottom rails, covered with heat moulded PVC "C" channel of 5mm thick sheet and 30x50mm wide to for styles and 5mm thick and 75mm wide PVC sheets for top rail and bottom rail either side and 5 mm thick, 20mm wide cross PVC sheet as gap insert for top rail and bottom rail, paneling of 5mm thick PVC sheet fitted with M.S. frame welded/ sealed to the styles and rails with 5x30mm PVC sheet beading on either side and joined together with solvent cement adhesive etc. complete in all respects as per direction of engineer in-charge fixed to frames. This includes providing brass hinges, brass aldrops, brass tower bolts, brass handles and brass door stoppers (For W.C. and bathroom shutters).	2.00	Sq. m	1830.00	3660.00

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
33	Thorough cleaning of existing oil bound distemper paint/white washing with water, by scrapers for old walls and stone rubbing for new plastered walls with suitable tools and applying one coat of oil based cement primer and applying 3 coats altek lappam one coat after drying the previous coat and sand papering and applying two coats of acrylic washable distemper etc., complete as directed by the Engineer-in-charge. Rate shall include all materials like lappum, primer, tools and tackles, scaffolding etc. Only acrylic washable distemper will be issued by BHEL at free of cost.	50.00	Sq. m	84.10	4205.00
34	Supply & fixing in position PVC pipes of 3" dia (as per IS 6 Kg/Sq. m) of best quality for drainage lines / urinal / hand wash areas including chasing the brick wall, concrete etc and making good the same after fixing the same etc complete.	20.00	R M	108.70	2174.00
35	Supplying & fixing CI Nahany traps 1st quality ISI marked conforming to IS:1729 - 1979 with CP grating fixing with white cement as per siter requirements with standard practice. 100 mm inlet - 75 mm dia (3") outlet pipe - 4 Kgs.	2.00	Each	200.00	400.00
36 a)	Supply & fixing 15 mm dia Nominal Bore GI Pipe medium grade properties and weight as per IS:1239 ISI mark with GI fittings including the cost of GI Pipe & its fittings, chasing brick work / concrete and making good the same, cost of labour, all materials etc complete.	50.00	R M	131.00	6550.00
36 b)	---do --- 20 mm dia (3/4")	50.00	R M	146.00	7300.00
36 c)	---do --- 25 mm dia (1")	50.00	R M	191.00	9550.00
37 a)	Supply & fixing of Gun Metal Gate (GM peet) valve as per IS - 778 Class-I, Indian make heavy type 15 mm (1/2") dia NB size.	2.00	Each	242.00	484.00
37 b)	---do --- 20 mm dia (3/4")	2.00	Each	327.00	654.00
37 c)	---do --- 25 mm dia (1")	2.00	Each	482.00	964.00

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
38	Supply, laying, jointing and testing 152.4 mm (6") SWG pipes of ISI make conforming to IS: 651 & 4127 with airtight cement joints in Cement mortar 1:5:1 prop. Including excavation of trenches and socket pits in any soil (except rock requiring blasting) upto 1524 mm (5'.0") depth and refilling with watering and tamping.	50.00	R M	254.00	12700.00
39	Construction of brick masonry chamber of dimension 0.914 x 0.457 x 0.914 m (3' x 1'6" x 3") with brick in CM 1:6 including plastering over both sides with CM 1:4, 20 mm thick and fitted with light weight CI frame and cover of size 0.914 x 0.457 m in CM 1:4 including bed concrete of CC 1:4:8 as required, supplying and fixing one CI steps in brick masonry if necessary including earth work excavation in all soils, refilling around the chamber removing the surplus earth etc complete as directed. CI frame and cover of 40 Kgs.	1.00	Each	3226.00	3226.00
40	Construction of brick masonry chamber of 23 x 30 cm (9" x 12") in brick work in CM 1:6 and plastering in CM 1:4, 20 mm for Gully trap 150 mm x 100 mm including cost of excavation, PCC 1:4:8, 75 mm thick, all materials, labour etc complete.	1.00	Each	321.00	321.00
41	Providing and placing on terrace (at all floor levels) of Polyethelene water storage tank of 1000 ltrs capacity with double layer approved brand and manufacture as per ISI with cover and suitable locking arrangement and making necessary holes for inlet and outlet and overflow pipes with fittings (ballcock, inlet and outlet nipples) without base support for tank. (Brick work will be paid seperately).	1.00	Each	6000.00	6000.00
42	Felling trees of the girth (measured at a height of 1 m above ground level) including cutting of trunks and branches removing the roots and stacking of serviceable materials and disposal of unserviceable materials - upto 1.20 M.	10.00	Each	359.80	3598.00
Part - I (Civil Works) Total:		53,86,638.28			

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
Part - II - Electrical Works					
1	<p><u>ELECTRICAL WORKS</u></p> <p>Cable Raceways Supply, installation, testing & Commissioning of Raceways with covers & Cable Trays with suitable covers for all ratings of power supply points, both 230VAC and 415 V AC. Supply & Installation of 96x38 GI ladder type Cable Tray with all accessories and supporting arrangement from ceiling or Wall complete in all respects.</p>	100.00	One	375.00	37500.00
2	<p>Supply, Installation and commissioning of 8 way, TPN, MCB type Power Distribution Board (PDB) flush mounted on wall, sheet metal fabricated, powder coated, having dust-proof and vermin' proof, and hinged door with all internals such as DIN rails, neutral-link, interconnected wiring complete with earthing lugs housing following switchgears: 63A, FP ELCB as incomer(100mA) - 1 No. 16/20A, SP, MCB outgoing(10KA) - 24 Nos. Make : Siemens/Legrand/Hager</p>	2.00	One	8125.00	16250.00
3	<p>CABLES / MAINS Supply & Installation of 1100V grade FRLS flexible armoured cable having sector / circular shaped aluminum / copper conductor PVC insulated cores, laid up, PVC tape wrapped inner sheathed, GI strip / wire armoured and overall extruded PVC sheathed conforming to IS:1554 laid on wall/ceiling using GI clamps & spacers as per route shown at site and further as directed by Consultant at site in the following sizes, complete in all respects.: Supply & laying of 4C x 16 SQ.MM Copper armoured flexible cable in suitable size of PVC Conduit.</p>	120.00	One	900.00	108000.00
4	<p>Supply and installation of end terminations for above mentioned cables, including compressed type brass glands, crimping type copper lugs, insulation tape etc. as required complete with earthing of glands in following size, complete in all respects. 4C x 16 SQ.MM copper armoured flexible cable</p>	2.00	Each	650.00	1300.00

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
5	<p>Supply, Installation and commissioning of MAIN LT PANEL, floor mounted, front operated, dead back, totally enclosed vermin proof, indoor, non-draw out, cubicle type power dist. panel fabricated out of 2mm thick CRCA sheet having gasketed hinged door on each cubicle, fully powder coated / enamel painted after seven tank treatment, incorporating horizontal and vertical sleeved copper busbars 'complete with all internal wiring, danger board, two earthing lugs, cable chamber etc. as required' housing below mentioned switchgears / meters complete in all respects. This panel should consist of following.</p> <p>Digital Energy meter with RS 485 port - 1 No. 250A 50KA TPN MCCB unit as Incomer - 1 No. 160A,50KA TPN MCCB as outgoing - 1 No. 63A, TPN MCB as outgoing - 6 Nos. 40A, TPN MCB as outgoing - 4 Nos. 0-250A, Ammeter with CT & inbuilt S/S - 1 No. 0-415V, Voltmeter with inbuilt S/S - 1 No. TP&N, Aluminum busbars of suitable size thick with PVC sleeving - 1 Set</p> <p>RYB, indicating lamps with resistors and fuses - 1 Set.</p> <p>This includes termination of the cables, end terminators, material, labour, commissioning etc. complete.</p>	1.00	Each	74750.00	74750.00
6	<p>Supply and installation of 8 way, TPN, MCB type Lighting Distribution Board (LDB) flush mounted on wall, sheet metal fabricated, powder coated, having dust-proof and vermin proof, and hinged door with all internals such as DIN rails, neutral-link, interconnected wiring complete with earthing lugs housing following switchgears: Complete in all respects. This should comprise the following.</p> <p>40A, FP ELCB as incomer(100mA) - 1 No. 10A, SP, MCB outgoing(10KA) - 24 Nos.</p> <p>Make : Siemens/Legrand/Hager</p>	1.00	Each	12334.00	12334.00
7	<p>WIRING</p> <p>Supply & Installation of surface/concealed point wiring FRLS using 600v grade 1.5 SQ.MM copper conductor PVC insulated wires (with proper R,Y,B color code) pulled through 1.2mm thick PVC conduits laid concealed over false ceiling or in wall chases including 1.0 SQ.MM green color copper earth wire and provision of grid plate type switches as approved by architect, complete in all respects.</p> <p>Primary light/fan points of 10A switch (Switch shall be of ROMA type)</p>	80.00	Each	945.00	75600.00

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
8	Supply & installation of above for Secondary light/fan points looped from the above point.	20.00	Each	335.00	6700.00
9	Supply & installation of Hub/Server Room Power Points(3R of 4sqmm copper wire in PVC conduit) with 32A Metal Clad Socket with M.S Enclosure control by a 32 A DP MCB.with Top in enclosure from Hub/Server room DB.	1.00	Each	2400.00	2400.00
10	Supply and laying of 1100V grade PVC insulated, copper conductor cables in 1.5mm thick P.V.C. conduits, run above the false ceiling, concealed in the wall or partition, saddles at every 600mm c/c. A separate neutral shall be run for each circuit. The rate shall include all fixing accessories like collars, tees, elbows, providing fan hooks, ceiling roses, holders, wooden blocks, switches, sockets, switch mounting MS boxes, MS Junction Boxes etc., of approved make, complete in all respects, for sl.No. 11 & 12 (Separate rate is not required to be quote for item No.10)				
11	Supply and laying of 2 runs of 2.5 SQ.MM. PVC insulated copper conductor FRLS cable along with 1run of 1.5Sq.mm PVC insulated copper conductor cable. Run in a 19mm dia. 1.2mm thick PVC conduit on surface of the ceiling or in wall.	1200.00	One	125.00	150000.00
12	Supply and laying of 2 runs of 4.0 SQ.MM. PVC insulated copper conductor FRLS cable along with 1 run of 1.5Sq.mm PVC insulated copper conductor cable. (1-PH AC'S) Run in a 25mm dia., 1.2mm thick PVC conduit, on surface of the ceiling or in wall, complete in all respects.	250.00	One	150.00	37500.00
13	Supply and installation of 10A, 5 pin 4 nos. shuttered type sockets controlled by 1no. 20A switch with suitable size of front plate etc. in consultation with engineer in charge, complete in all respects. Make: ROMA OF ANCHOR	30.00	Each	1350.00	40500.00
14	Supply and installation of one no 10A/20A 5pin shuttered type sockets controlled by 1no. 10A/20A switch with suitable size of front plate etc. Make: ROMA OF ANCHOR	5.00	Each	800.00	4000.00

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
15	EARTHING Supply and installation of 2 nos. of separate earth pits each with material for power and network (including excavation) comprising of 600mm x 600mm x 3mm thick copper plate buried at a minimum depth of 2.5 meter including necessary materials like charcoal, salt etc as required conforming to BIS standards having brick masonry chamber with hinged cover and watering arrangement, complete in all respects.	2.00	Each	21000.00	42000.00
16	Supply and installation of isolated earthing system for computer etc. using insulated green copper earthing wire laid through 20mm PVC conduits from separately made earth pit to the equipment in following sizes Supply and installation of 16 sqmm, cu., in 20mm PVC flexible conduit.	2.00	One	150.00	300.00
17	Supply and installation of 6 sqmm, cu in 20mm PVC flexible conduit.	200.00	One	75.00	15000.00
18	LIGHTING FIXTURES Supply and installation of Energy efficient light fitting, T5 type 2X28W industrial luminaire with 28W T5 Fluorescent lamps. This includes supply & fixing of downrods, round blocks, connecting the copper twin twisted wire from ceiling rose to fitting and other accessories. Make: Philips/Asian Electronics.	60.00	Each	2500.00	150000.00
19	Supply and installation of 300mm(12") sweep Heavy duty exhaust fans. Which includes assembling and testing of all fans. The fans are to be rigidly fixed to wall with suitable arrangement. Black color, double ball bearing, low noise, white epoxy powder coated paint finish with bird guard. Make shall be: Orient/Usha/Crompton.	8.00	Each	2200.00	17600.00
20	Supply & installation of ceiling fan 1400mm sweep (56") double ball bearing type, ISI mark, white colour with all standard accessories including fan hook, downrod, clamps and connecting it up to the fan point with suitable length of 16/0.2.mm PVC insulated twin twisted copper conductor cable. Make : Orient/Usha/Crompton.	4.00	Each	2500.00	10000.00
21	Supply and fixing of fan step regulator Dura EME of Anchor code : 21496 fixed on a suitable Modular type concealed box with suitable top cover for Ceiling Fans.	4.00	Each	450.00	1800.00
22	Proper dressing of all the existing power cable and terminated properly by using suitable lugs, ferrules etc.	1.00	LS	2000.00	2000.00
Part - II (Electrical Works) Total:		8,05,534.00			

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
Part - III - Fire Alarm System					
1	Smoke and Fire Detection and Alarm System: Supply, installation and commissioning of microprocessor based, Two Loop Intelligent Addressable Fire Alarm Control Panel with independent battery backup suitable for 72 hours AND WITH the following features, complete in all respects.: a) 159 detectors and 159 modules per SLC loop b) The system display shall provide a 640-Character backlit alphanumeric Liquid Crystal Display (LCD). It shall also provide ten Light-Emitting-Diodes (LEDs), that indicate the status of the following system parameters: AC POWER, FIRE ALARM, PRE-ALARM, SECURITY, SUPERVISORY, SYSTEM TROUBLE, OTHER EVENT, SIGNALS SILENCED, POINT DISABLED, and CPU FAILURE. c) Built in Alarm, trouble and supervisory relays d) Response time of less than 2 seconds. e) UL Listed f) Pre-signal and Positive Alarm Sequence: The system shall provide means to cause g) Print Functions: The system shall provide means to obtain a variety of reports listing all event, alarm, trouble, supervisory, or security history. h) Shall comply with requirements of NFPA Standard 72 & NFPA - 318. The system shall be electrically supervised and monitor the integrity of all conductors.	1.00	1 set	198145.00	198145.00
2	Supply & installation of Intelligent Multicriteria Detector with mounting base and surface mounting kit and with following features: a) Addressable device, designed to monitor a minimum of photoelectric and thermal technologies in a single sensing device b) Utilizing advanced electronics that react to slow smoldering fires and thermal properties all within a single sensing device. c) Microprocessor design & shall be capable of selecting the appropriate sensitivity levels based on the environment type and then have the ability to automatically change the setting as the environment changes d) Twin LEDs for 360 degree viewing. e) UL Listed f) Operating Voltage : 15 to 32 Vdc 40 Nos. of these Multicriteria Detectors will be located above the false ceiling for detecting any short circuits and balance 52 Multicriteria Detectors will be located in ALL the cabins, electrical control room, server room, conference halls etc	30.00	Each	5405.00	162150.00

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
3	Supply & installation of Addressable Duct Sensor with housing and accessories and with following features: a) Continuous sensitivity monitoring and alarm verification from the panel b) Simple change of detector heads c) Easily mounting on round and rectangular ducts d) Air Velocity rating from 150 to 1200 metres per minute e) Poly Carbonate cover for the convenient visual inspection of sampling tube filters f) UL Listed g) Duct sampling tube should be of maximum 3.7 metres.	2.00	Each	13800.00	27600.00
4	Supply & installation of Addressable Manual Break Glass Point with accessories and with following features: a) Direct decade addressing b) Built in electronics c) LED for Activation d) Designed to the requirement of BS5839 part -2 e) Operating voltage: 24 Vdc f) Key reset g) Meets UL-38 rating	2.00	Each	5060.00	10120.00
5	Supply & installation of Addressable Isolator Module with accessories and with following features: a) Powered by SLC loop directly b) Plug in connectors c) Address selector switches visible in 2 planes d) Approved to GEA GEI 1-082 and CEA GEI 1-084 e) Surface Mounting box	2.00	Each	5060.00	10120.00
6	Supply & installation of Addressable Control Output Module with accessories and with following features: a) Addressable Relay Module with dry contact output to activate auxiliary devices. b) Built in type identification. c) High noise immunity d) Operating Voltage: 15-32 Vdc e) UL Listed	2.00	Each	5405.00	10810.00

Sl. No.	Description of the item	Qty	Unit	Rate in (Rs)	Amount Rs.
7	Supply & installation of Addressable Analogue Horn sounders and with following features: a) Addressable Horn Sounders shall be of general area coverage. b) Designed with dual front and rear sound paths, providing an 'all around' sound output - ideal for open area coverage. c) Powered directly from Panel. d) Rotary address switches e) Operating voltage: 24 Vdc f) UL Listed Cables and accessories: as required- 2 Core 1.5 sq mm armoured FRLS cable with suitable accessories. Make : Notifier	2.00	Each	43700.00	87400.00
8	Supply & laying of fire alarm cable 2 core, 1.5 Sq. mm armoured FRLS twisted cable with suitable accessories. Make: Notifier	350.00	LS	103.00	36050.00
Part - III (Fire Alarm System) Total:		5,42,395.00			
				Total	67,34,567.28
Total : Rs. Sixty Seven lakhs thirty four thousand five hundred sixty seven only.					

Service Tax:- The Service tax as applicable is extra which will be paid by BHEL to the agency after submission of necessary valid documents by the agency.

Note : The Tenders are required to quote the tender value on percentage (%) basis at excess or less or on as per estimate value

Tender %	In figure	In words
Excess		
Less		
Estimated value		

Name of the Contractor :

Signature of the Contractor

Accounts Representative

Opening officer



SPECIFICATION SHEET
GENERAL PURPOSE STEEL DOORS

MATERIAL

Door Frames and Leaves are made from Galvanized Steel.

DOOR LEAVES

Constructed from 0.80mm Thick Galvanized Steel Sheet formed to provide a 46mm thick fully flush, double skin door shell with Lock Seam joints at stile edges. In-fill of Honeycomb Kraft Paper is used to give the required rigidity and effective acoustic and thermal insulation.

DOOR FRAMES

Produced from 1.20mm (18G) thick galvanized steel sheet formed to single rebate profile of size 100mm X 57 mm.

The Door Frames may be built into the brick or block walls using corrugated "TEE" anchors not welded to the Frames (First Fix). Frames may also be fixed on plastered openings with the help of Anchor Fasteners (Second Fix). Door Frames are supplied to knockdown form with butt joints for Bolted Assembly at site.

VISION GLASS

Vision Glass with 5 MM clear float glass can be provided in Circular, Square or Rectangular. The circular Vision Glass can be provided in 380 MM Dia only. Standard Rectangular sizes 200 mm x 300 mm, 450mm x 750 mm & 350 mm x 750 mm.

LIMITATIONS ON VISION GLASS (FOR NON STANDARD SIZES):

Height not exceeding 1550 MM, Width to at least 300 MM less than that of the shutter width

LOUVERS

Factory finished and fixed Metal Louvers (sight proof) can be provided in Square / Rectangular sizes.

FINISH

The doorframes and door shutters are coated with Zinc Phosphate Primer to receive any paint on site or finished with Thermosetting Polyurethane paint of Aliphatic Grade providing high levels of scratch resistance and durability.

IRONMONGERY

HINGES

Stainless Steel Ball Bearing Butt Hinges 3 mm thick fixed flush to the frame and shutter.

LOCK

Mortise Sash Lock with Lever Handles, Mortise Dead Bolt, Mortise Latch, Panic Devices etc can be provided as required.

FLUSH BOLTS (DOUBLE DOOR)

Concealed extended lever action flush bolts provided on the top of the door to the leading stile edge.

DOOR CLOSERS

Doors are made suitable to receive a large variety of Door Closers.

OPTIONS

Exit, Electro Magnetic Hold Open Device, Door Coordinator, Smoke Seals for Air tightness, Automatic Door Bottoms etc., can be provided if required.