



Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

ENQUIRY NOTICE INVITING TENDER	Phone: +91 431 257 76 53 Fax : +91 431 252 00 31 Email : skaruna@bheltry.co.in Web : www.bhel.com
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TWO PART BID Tender to be submitted in two Parts	Enquiry Number: 2631400032	Enquiry Date: 25.10.2014	Due date for submission of quotation: 26.11.2014
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You are requested to quote the Enquiry number date and due date in all your correspondence. This is only a request for quotation and not an order.

Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of tender opening.

Item	Description
10	Public Addressing System for Conference Hall (01 Set) per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)

Important points to be taken care during submission of offer:-

1. The Compliance Form for Commercial Terms & Conditions to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
2. All updates, amendments, corrigenda, etc., (if any), for each tender will be posted only on the above websites from time to time, as and when required, until each tender is opened. There will be no publication of such updates, amendments, corrigenda, etc., through newspapers or any other media

BHEL's General guidelines / instructions (refer MM/CE/GENL/001) including bank guarantee formats and list of consortium banks, commercial terms check-list can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under above Enquiry reference.

Tenders should reach us before 14:00 hours on the due date
Tenders will be opened at 14:30 hours on the due date
Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present

Yours faithfully,
For **BHARAT HEAVY ELECTRICALS LIMITED**

Senior Engineer/ Capital Equipment / MM

PART-A

Pre-Qualification Criteria for Public Address System supply, erection, testing and commissioning works at Administrative Building ED conference hall - BHEL Trichy complex.

SL.NO	DESCRIPTION	VENDOR TO CONFIRM
1	Only those vendors, who have supplied ,erected, tested and commissioned atleast one similar type PA system in the past 3 years and such installatiobn presently working satisfactorily more than one year after commissioning should quote.	
2	List of customers/companies on which similar installations supplied & commissioned by the vendor.	
3	Performance certificate from minimum one customer / company regarding satisfactory performance of the equipments for a minimum period of one year on the customer letter head.	
4	Vendor should quote for supply, erection, testing & commissioning of the PA SYSTEM and allied equipments as per the scope of PART-B ITEMS identified in the NIT	
5	Vendor should have the Pan,Tin,Service Tax and Resistration documents for the Firm and copies should be submited along with the offer.	
6	OEM/ Dealership certificate should be enclosed by the vendor	
7	Vendor /Bidder should confirm all the above said points without which the offer will not be technically considered.	

PART - B

TECHNICAL SPECIFICATION FOR PA SYSTEM AT ADMINISTRATIVE BUILDING-ED CONFERENCE HALL-BHEL TRICHY COMPLEX

SCOPE OF WORK : SUPPLY ,ERECTION,TESTING AND COMMISSIONING OF PA SYSTEM IN THE EXISTING ED CONFERENCE HALL SIZE: 38.6' L X 38.6' B COMPRISING OF THE PUBLIC ADDRESS SOUND SYSTEM EQUIPMENTS LIKE, DESKTOP/WIRELESS MICROPHONES,MIXERS,SOUND SIGNAL PROCESSOR,POWER AMPLIFIER, SPEAKERS, DVD PLAYERS, LEAD MICROPHONE, AUDIO CABLES, CONNECTORS, RACK/STANDS ETC., AS DETAILED BELOW IN ITEM SL. NO. 1 TO 16 AND DRAWING FOR ED CONFERENCE HALL IS ATTACHED.

SL,NO	DESCRIPTION	SPECIFICFATION	QTY	VENDOR TO SPECIFY /VENDOR TO CONFIRM
1	WIRED MICROPHONE	DESKTOP WIRED MICROPHONE	13Nos	
1.1	MAKE	ELECTROVOICE / SHURE / AKG		
1.2	MODEL	EV-PC DESKTOP/SHURE-418D-C/ AKG-CGN521 STS UNIT		
1.3	TYPE	PROFESSIONAL,SHOCK ABSORBING, DESKTOP,GOOSENECK MICROPHONE - LENGTH IS 45cm to 50cm		
1.4	ELEMENT	CONDENSER		
1.5	POLAR PATTERN	POLAR SWITCHING PATTERNS: OMINI, CARDIOID, SUPERCARDIOID, HYPERCARDIOID		
1.6	FREQUENCY-RESPONSE	50hz to 20khz		
1.7	IMPEDANCE	150-200-2000 ohm		
1.8	SIGNAL-to-NOISE RATIO	65.0dB		
1.9	MAX.I/P SOUND LEVEL	123.0dB (1kHz @1% THD,1KW LOAD)		
1.10.	POWER REQUIRMENT	12VOLT-52VOLT DC		
1.11	CONNECTOR TYPE	3PIN XLR		
1.12	CASE MATERIAL /FINISH	STEEL/NON REFLECTIVE CAMERA BLOCK		
1.13	RF/GSM PROTECTION	RF SHIELD.		
1.14	DESKTOP BASE SIZE	BLOCK COLOUR & SUITABLE AT TABLE TOP		
1.15	PROGRAMMABLE SWITCH	ON/OFF SWITCH ATTACHED IN THE UNIT		
1.16	WINDSCREEN	SNAP FIT FOAM WINDSCREEN		
2	WIRELESS MICROPHONE	WIRELESS MICROPHONE SYSTEM (UHF) : HAND HELD TRANSMITTER , RACK MOUNT RECEIVER WITH MINI TABLE STAND, BASE, & CLIP HOLDER	4Nos	
2.1	MAKE	ELECTROVOICE / SHURE / SENNHEISER		

2.2	MODEL	UHF RANGE HAND HELD TRANSMITTER AND RACKMOUNT RECEIVER MODEL - EV R300HD A / SHURE- SLX24 / BETA58A / SENNHEISER - XSw 65	
2.3	TYPE	UHF HANDHELD TRANSMITTER & RACKMOUNT RECEIVER	
2.4	FREQUENCY RESPONSE	50hz - 18 khz	
2.5	SIGNAL to NOISE RATIO	> 100dB	
2.6	RF SENSITIVITY	<1.0uV RECEIVER	
2.7	No. OF PRESET CHANNEL	MINIMUM 12 CHANNELS AND RF RANGE-16MHZ	
2.8	POWER REQUIREMENT	12VDC,500mA	
2.9	RECIVER OUTPUT	1/4INCH UNBALANCED,3PIN XLR BALANCED	
2.10.	ANTENNA TYPE	DIVERSITY TRANSMITTER	
2.11	POLAR PATTERN	CARDIOID/SUPERCARDIOID	
2.12	RF OUTPUT DYNAMIC RANGE	>8mW, >95dB	
2.13	CAPSULE	PL22 DYNAMIC CAPSULE /IMPROVED ONE	
2.14	DIVERSITY ANTENNA	TRUE ANTENNA	
2.15	MUTE SWITCH	ON/OFF,SET.UP,DOWN,SYNC	
2.16	DISTORTION AT 1KHZ	<1.0,0.4 typical%	
2.17	ACCESSORIES	MINI TABLE STAND(ROUND BASE), CLIP & HOLDER	
3	MIXER	16 CHANNEL COMPACT MIXING SYSTEM	1No
3.1	MAKE	ELECTRO VOICE /ALLEN& HEATH / SOUND CRAFT	
3.2	MODEL	EV-DC-CMC1600-3 / ALLEN&HEATH-QU-16 / SOUND CRAFT - SPIRIT FX16II 16 CHANNEL WITH LEXICON EFFECTS PROCESSOR	
3.3	TYPE	COMPACT DIGITAL MIXING CUM PRE AMPLIFIER SYSTEM	
3.4	CHANNELS(MONO+ STEREO)	16CHANNEL (LINE INPUT + STEREO)	
3.5	AUXILIARYS-MONO,FX,AUX	PRE / POST SWITCHABLE	
3.6	MIC GAIN -MONO+ STEREO	0 to +60 dB or +10 to 60dB	
3.7	THD LEVEL @1KHZ	< 0. 09%	
3.8	FREQUENCY RESPONSE @3db, ref @1Khz	15khz to 70khz	
3.9	CROSSTALK-FADER TO AUX , MONO	>85dB	

3.10.	CHANNEL TO CHANNEL	<-80dB		
3.11	CMRR MIC I/P@1KHZ	>80dB		
3.12	INPUT SENSITIVITY @ all level control in maximum	155uV / 1.55mV/15.5mV		
3.13	INPUT IMPEDANCE	MIC-2kohm /> 3.3kohm, CD-10kohm,OTHER I/P ->15kohm		
3.14	OUTPUT IMPEDANCE	PHONES-47 ohm, OTHER OUT PUTS- 75 ohm		
3.15	SIGNAL to NOISE RATIO	minus 125dBu		
3.16	METERING	SIGNAL LEADS		
3.17	FILTER SECTION	HIGH PASS, MID PASS, LOW PASS FRQ. LEVEL		
3.18	CHANNEL LEVEL CONTROL	100MM FADER		
3.19	GAIN CONTROL	ROTARY CONTROL or OTHER VERSION		
3.20.	POWER CONSUMPTION	< 100 WATTS		
3.21	POWER SUPPLY	INTERNAL PSU-90V-240V,AC,50HZ		
3.22	OPTIONAL ACCESSORIES	DUST COVER & OTHER ACCESSORIES		
4	DIGITAL SIGNAL PROCESSOR	DIGITAL AUDIO SIGNAL PROCESSOR WITH FEED BACK REDUCER	1No	
4.1	MAKE	ELECTROVOICE / SHURE / AKG		
4.2	MODEL	EV-DC ONE SOUND SYSTEM PROCESSOR / SHURE DFR22E / AKGDFM4X4		
4.3	TYPE	AUTOMATIC DIGITAL FEED BACK ELIMINATOR		
4.4	FREQUENCY RESPONSE	10HZ -22KHZ , +/- 1- 0.5 Db		
4.5	SAMPLE RATE	48KHZ /24BIT		
4.6	DYNAMIC RANGE	MINIMUM 110dB(A) ,20HZ -20KHZ		
4.7	INPUT IMPEDANCE	10K OHM/40kohm		
4.8	OUTPUT IMPEDANCE	UP TO 200 ohm		
4.9	CLIPPING LEVEL	INPUT MIN 24dBu, O/P -24dBu /PERMITTED LEVEL		
4.10.	PROPOGATION DELAY	< 1.5ms /20.83uS /2s		
4.11	THD LEVEL	< 0.01 /0.05 (20HZ TO 20KHZ /22HZ TO 22KHZ)		
4.12	USB	PC INTERFACE/TYPE -B		
4.13	GAIN RANGE	minus 1dB to minus 72 dB		
4.14	SERIAL COMMUNICATION PORT	YES		

4.15	ELECTRONICS TYPE	PROCESSOR BASED	
4.16	COMMON MODE REJECTION	minus 80dB at 1KHZ (typical)- YES /NO	
4.17	OPERATING VOLTAGE	90-240V, AC, 50HZ	
4.18	OPTIONAL ACCESSORIES	INDICATE THE ITEMS	
5	POWER AMPLIFIER	DUAL CHANNEL STEREO POWER AMPLIFIER	2Nos
5.1	MODEL	EV-Q44-II/LAP GRUPPAN C SERIES 10X4/YAMAHA-XP-2500	
5.2	MAKE	ELECTROVOICE/LAPGRUPPAN/ YAMAHA	
5.3	TYPE	RACK MOUNTED DUAL CHANNEL STEREO POWER AMPLIFIER	
5.4	LOAD IMPEDANCE	2 Ohm, 4 Ohm, 8 Ohm	
5.5	RATED OUTPUT POWER THD @1WATT, 20H to 20 KHZ	0.1-1%, 400W / 4 ohm, > 200W / 8 ohm	
5.6	SINGLE CHANNEL O/P POWER	> 200WATTS	
5.7	THD @ 1kHz AND 1dB below	CLIPPING LEVEL < 0.05%	
5.8	SIGNAL to NOISE RATIO	> 106dBA	
5.9	INPUT IMPEDANCE	20kohm	
5.10.	OUTPUT IMPEDANCE @100HZ	30mohm	
5.11	VOLTAGE GAIN	32 .0 dB	
5.12	CMR	> 50dB, 20HZ -20KHZ	
5.13	CHANNEL SEPARATION @1KHZ	> 65dB	
5.14	PROTECTION	AUDIO LIMITERS, HIGH IMPEDANCE ,DC,HF,BACK EMF,PEAK CURRENT LIMITERS,INRUSH CURRENT LIMITERS, TURN ON DELAY	
5.15	POWER REQUIRMENTS	230VOLT, AC 50HZ	
5.16	AMBIENT TEMPERATURE	SUITABLE FOR +5 DEGREE 'C' TO +45 DEGREE 'C'.	
5.17			
6	SPEAKER	FULL RANGE, WALL MOUNTED LOUD SPEAKER	5Nos
6.1	MAKE	ELECTROVOICE / JBL/MACKIE	
6.2	MODEL	ELECTROVOICE - EVID 4.2t /JBL 25AV/MACKIE C 200	
6.3	TYPE	FULL RANGE, WALL MOUNTED , LOUDSPEAKER 200WTTTS WITH WALL MOUNTED ACCESSORIES.	
6.4	POWER HANDLING	200WATTS CONTINUOUS, 400/500 PEAK LEVEL	

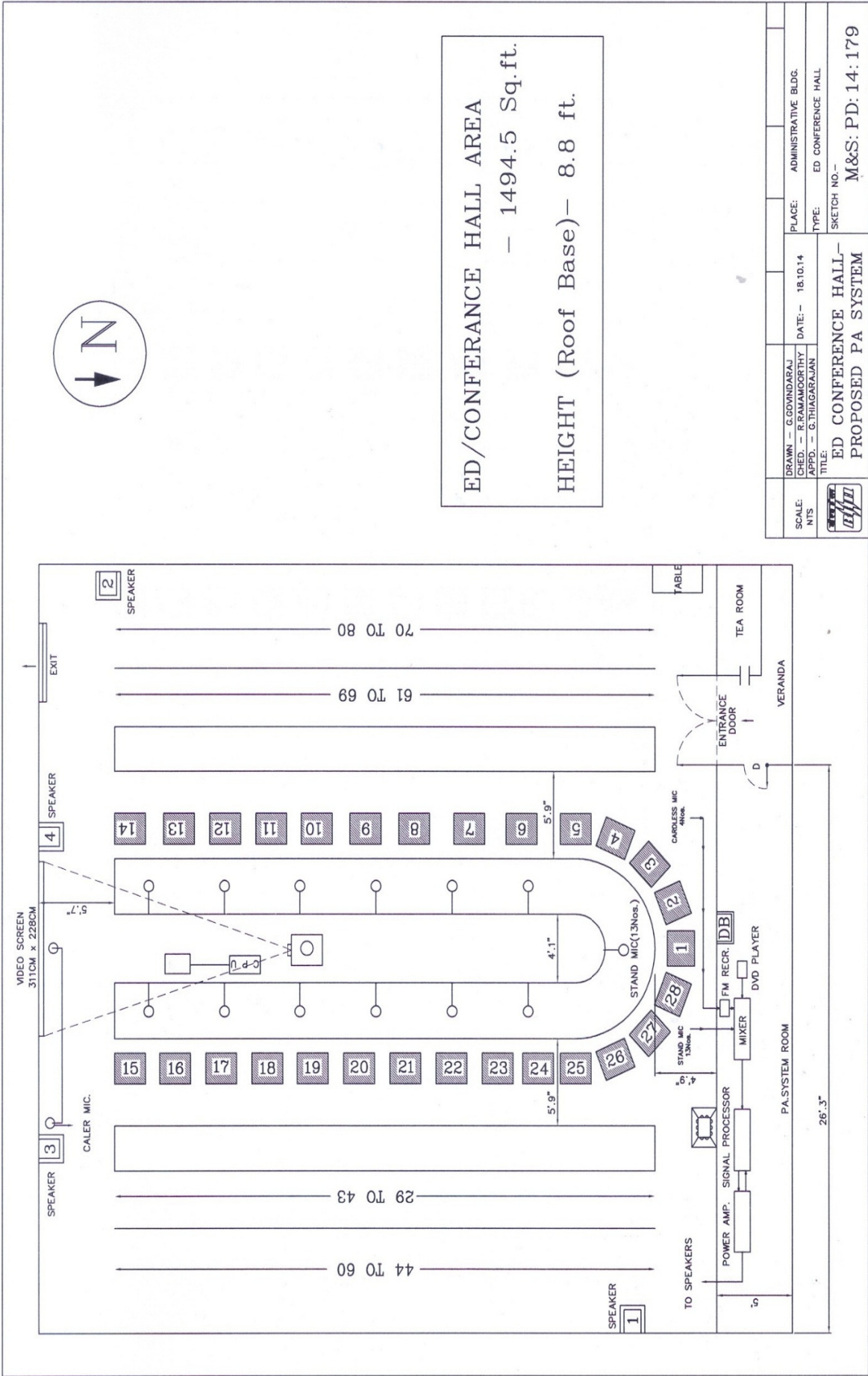
6.5	SENSITIVITY	89 Db , 1w/1m		
6.6	IMPEDANCE	8 ohm		
6.7	CROSSOVER FREQUENCY	1.8 KHZ TO 2.2KHZ		
6.8	MAGNETICALLY SHIELDED	YES		
6.9	TRANSFORMER VERSIONS	YES		
6.10.	GRILLES	ZINC PLATED / PAINTED SS GRILLES		
6.11	WEATHER RESISTANT	CONFIRM TO MILL SPEC 810 AND IEC 529/ IP34		
6.12	ENCLOSURE MATERIAL	ABS(PAINTABLE)		
6.13	WALL MOUNTED ACCESSORIES SETS REQUIRED	WALL MOUNTED ACCESSORIES SETS		
7	CLIP -ON LAVALIER MICROPHONE	CLIP ON LAVALIER MICROPHONE	1No	
7.1	MAKE	SENNHEISER / SHURE / EELECTRO VOICE		
7.2	MODEL	SENNHEISER-MKE-2/ EQUIVALENT IN SHURE / E.VOICE		
7.3	TYPE	CONDENSER, CLIP ON MICROPHONE		
7.4	FREQUENCY RESPONSE	20hz -20 khz / plus or minus 3dB		
7.5	CABLE LENGTH	1.6m		
7.6	SENSITIVITY	5mV		
7.7	NOMINAL IMPEDANCE	1000 OHM		
7.8	NOISE LEVEL WEIGHTED	39 dB		
7.9	MAX.SOUND LEVEL PRESSURE	142 dB		
7.10.	Operating voltage	7.5volt DC		
8	HEAD PHONE	HEAD PHONE WITH JACK	1No	
8.1	MAKE	SENNHEISER/AKG/ELECTROVOICE		
8.2	MODEL	SENNHEISER-HD280PRO /AKG-K612PRO / SHURE-SRH 440		
8.3	TYPE	OPEN BACK, DYNAMIC HEAD PHONE		
8.4	SENSITIVITY	101dBV		
8.5	FREQUENCY RANGE	12hz-40 khz		
8.6	IMPEDANCE	120 ohm /ABOVE		
8.7	INPUT POWER	200mW		
8.9	CABLE	3mtr		
8.10.	CONNECTOR & ADOPTOR	STEREO JACK PLUG 3.5MM & CONVENTIBLE JACK PLUG 3.5 mm / 6.3mm		

9	WIRED LEAD MIC	WIRED DYNAMIC VOCAL MICROPHONE WITH CLIP & HOLEDER	1No
9.1	MAKE	SHURE/ELECTROVOICE/ AKG	
9.2	MODEL	SHURE- SM58 / AKG- D5 / ELECTROVOICE - N- D767a	
9.3	TYPE	DYNAMIC VOCAL MICROPHONE -WIRED, BALANCED XLR -3PIN XLR	
9.4	POLAR PATTERN	SUPER CARDIOID	
9.5	AUDIO FREQ. BAND WIDTH	> 35hz TO 22khz	
9.6	SENSITIVITY	> 2.6mV	
9.7	ELECTRICAL IMPEDANCE	> 600 ohms	
9.8	LOAD IMPEDANCE	> 2000 ohms	
10	DVD PLAYER	DVD PLAYER WITH USB CONNECTIVITY	1No
10.1	MAKE	PHILIPS/SONY/LG	
10.2	MODEL	PHILIPS-DVP3888KX-94 /SONY-DVP-SR 660P/LG-DV 656	
10.3	PLAY BACK MEDIA	COMPACT DISC-DIVX.MP3-CD, CD-R/RW	
10.4	VIDEO PLAY BACK	DYNAMIC RANGE-80dB (1khz)	
10.5	SIGNAL TO NOISE RATIO	90	
10.6	DISTORTION AND NOISE	80 Db	
10.7	CROSS TALK(1KHZ)	90dB	
10.8	VIDEO & AUDIO PLAY BACK	PM3 CD, MP3DVD , CD -R/RW AUDIO CD,DVD-R/RW DIVX	
10.9	VIDEO DISC PLAY BACK	PAL SYSTEM	
10.10.	ACCESSORIES	REMOTE CONTROL,AUDIO /VIDEO CABLE, HDMI CABLE, USER MANUAL, QUICK START GUIDE, BATTERY, WARRENTY CARD, POWER CARD , WITH USB PORT etc.,	
11	MICRO PHONE CABLE	SHIELDED MICRO PHONE CABLE	400M
11.1	MAKE	PERCON/BELDEN/MX AUDIO CABLE	
11.1	TYPE	TWO CORE, INDIVIDUALLY SHIELDED + OUTER SHIELDING	
11.3	COLOUR	OUTER COLOUR BLACK	
11.4	CONDUCTOR	0.35SQ.MM ABOVE ,11/24 STRANDS COPPER CONDUCTOR	
11.5	CONFIGURATION	2PAIR & DOUBLE SHIELDED	
1.6	OUTER SHEATH	CYLINDRICAL DIAMETER	
12	SPEAKER CABLE	TWO CORE SPEAKER CABLE	100M
12.1	MAKE	PERCON/BELDEN/MX AUDIO CABLE	

12.2	TYPE	TWO CORE PVC SHEATHED ,DIELECTRIC SPEAKER CABLE	
12.3	CONDUCTOR	COPPER CONDUCTOR,16SWG, 65 STARND S COPPER	
12.4	SHEATH	INDIVIDUAL SHEATH AND OVER ALL SHEATH(CIRCULAR)	
13	CONNECTORS	2PIN /3PIN XLR CONNECTOR	60Nos
13.1	MAKE	NEUTRIK / SWITCH CRAFT	
13.2	TYPE	3PIN XLR/2PIN STEREO/MONO-GOLD PLATE TYPE	
13.3	AUDIO APPLICATION	AUDIO CONNECTIVITY	
14	MICROPHONE STAND	MICROPHONE STAND WITH MIC HOLDER	1No
14.1	MAKE	HERCULES or EQUIVALENT MAKE	
14.2	MODEL	MS210B /OTHER EQU. MAKE MODEL	
14.3	BASE	SILVER METAL ROUND H BASE WEIGHTED FOR STABILITY	
14.4	HEIGHT ADJUSTMENT	ONE HANDED ADJUSTMENTS	
14.5	OVER ALL HEIGHT	1020-1680MM	
14.6	MIC HOLDER	3/8 INCH MIC HOLDER	
15	SPEAKER STAND	SPEAKER STAND	2Nos
15.1	MAKE	HERCULES or EQUIVALENT MAKE	
15.2	MODEL	SS200BB /OTHER EQU. MODEL	
15.3	CARRYING BAG	STAND CARRYING BAG	
15.4	TYPE & SIZE	FOLDED SPEAKER POLE & SIZE - 35MM - 38MM SIZE	
15.5	HEIGHT ADJUSTMENT	128-205CM -ADJUSTABLE	
15.6	LOAD CAPACITY	45KG APPROXI.	
15.7	SPEAKER ADOPTOR	SS100B- MODEL or EQUIVALENT	
15.8	MATERIAL	ALUMINIUM	
16	AUDIO RACK-9U	AUDIO FLOOR RACK WITH FAN, POWER STRIP AND CASTORS	1No
16.1	MAKE	VALRACK / EQUIVALENT	
16.2	SIZE	ABOVE SUPPLIED ITEMS ACCOMDATION	
17	INTALLATION,WIRING, TESTING & COMMISSIONING OF ABOVE ITEMS	TO BE SPECIFIED	
18	DOCUMENTS REQUIRED	PRODUCT CATALOGUE FOR ITEMS SL.NO. 01 TO 16.	

18.1	OPERATION, MAINTENANCE & TROUBLE SHOOTING MANUALS ATTACHMENTS	TO BE CONFIRMED		
18.2	TECHNICAL DATA SHEETS ALONG WITH OFFER	TO BE ENCLOSED		
19	PRE DESPATCH INSPECTION	AT VENDOR SITE - TO BE CONFIRMED		
20	SUPPLY, INSTALLATION, TESTING, COMMISSIONING & PROVEOUT THE TOTAL SYSTEM FUNCTIONING.	TO BE CONFIRMED		
21	GENERAL CONDITIONS:			
21.1	VENDOR SHOULD VISIT THE SITE BEFORE SUBMISSION OF THEIR OFFER .			
21.2	PVC PIPES/ CASING -CAPPING WIRING WORKS FOR MICROPHONE CABLING, SPEAKER CABLING ARE UNDER VENDOR SCOPE.			
22	VENDOR SHOULD SUBMIT SEPARATE OFFER FOR AMC CHARGES FOR THE ABOVE SYSTEM AFTER ONE YEAR WARRANTY & GUARANTEE PERIOD			

DRAWING SHEET FOR ED CONFERENCE HALL (HALL SIZE: 38.6'X38.6')



ED/CONFERENCE HALL AREA
 - 1494.5 Sq.ft.
 HEIGHT (Roof Base) - 8.8 ft.

