

BISMI STATIONERY STORE

No.	PARTICULARS OF WORKS	NOS.	L.	B.	D.	QTY.	TOTAL	RATE	PER UNIT	Up to Date		Deduct Previous		Since Last		Remarks
										Qty.	Amount	Qty.	Amount	Qty.	Amount	
	TISSI ①	✓	52.67	-	0.08	4.21										
	Stage hand side	✓	115.20	-	0.08	9.22										
	General room F.I.P. work	✓	232	12.19	0.08	2.21										
	round area	✓	27.21	-	0.08	2.99										
	A.C. cut out area	✓	1.60	0.80	0.08	0.20										
	round area	✓	27.21	-	0.08	1.58		2.700.00	Cum	51.95	17195.55					
	105 Providing and laying in P.S.I. - tion. Specified size of RCC including completion and curing complete but exclu- ding casting, shuttering and reinforcement I.I.'s required size in foundation and Plinth F-15 as below				work in part	(-)	4.01									
					work in part	(-)	9.02									
						(-)	0.79									
							37.66									

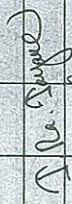

① 159

No.	PARTICULARS OF WORKS	NOS.	L.	B.	D.	QTY.	TOTAL	RATE	PER UNIT	Upt		Deduct Previous		Since Last		Remarks	
										Qty.	Amount	Qty.	Amount	Qty.	Amount		
	at similar locations, hand																
	in Panels not as coming																
	4 sqm. consolidated kind																
	bar and cured complete																
	Fiber screenings																
	(Callery area (in part))																
	East 6 work site																
	Tony Area North ①																
	T121 ②																
	T121 ③																
	T121 ④																
	T121 ⑤																
	T121 ⑥																
	T121 ⑦																
	T121 ⑧																

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BISMI STATIONERY STORE

Sl. No.	PARTICULARS OF WORKS	NOS.	L	B	D	QTY	TOTAL	RATE	PER UNIT	Up to Date		Deduct Previous		Since Last	Remarks
										Qty	Amount	Qty	Amount		
	and Graded Stone aggregate 40mm nominal size in horizontal bedding and vertical faces including side courses, covering etc. C&P lake, etc nominal size 1:3:6 Ratio P&R no: 63	✓ 12	1.50	2.25	0.20	174.96	176.88	2,400.00	Cum	176.88	6,54,132.00	174.96	6,47,332.00	7,104.00	
104	Providing and laying plain cement concrete 1:3:6 with 20mm sand bed to required thickness (not exceeding 100mm) and slopes to suit screedings, floor screedings														

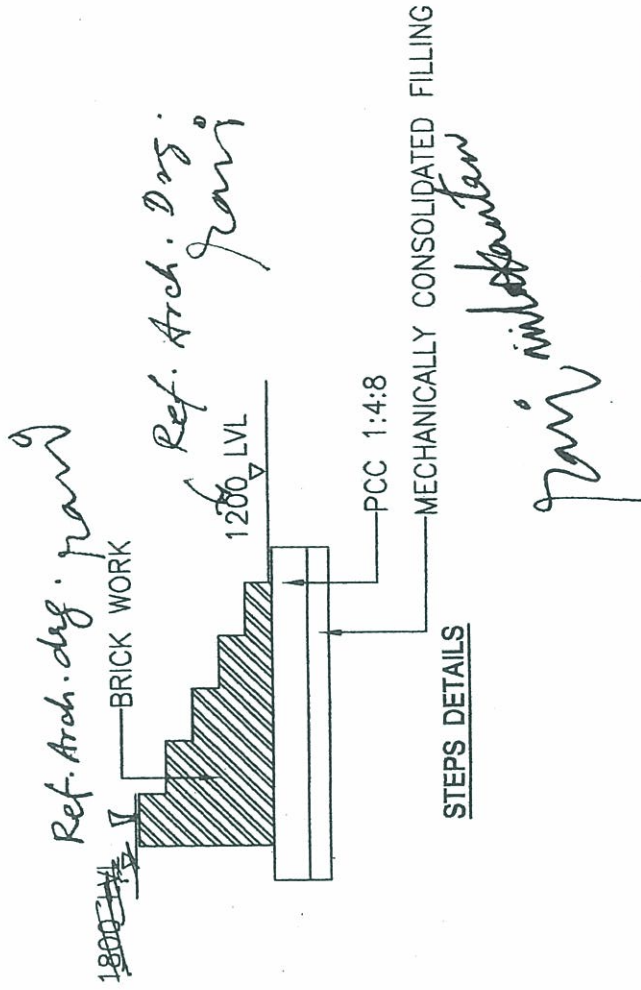
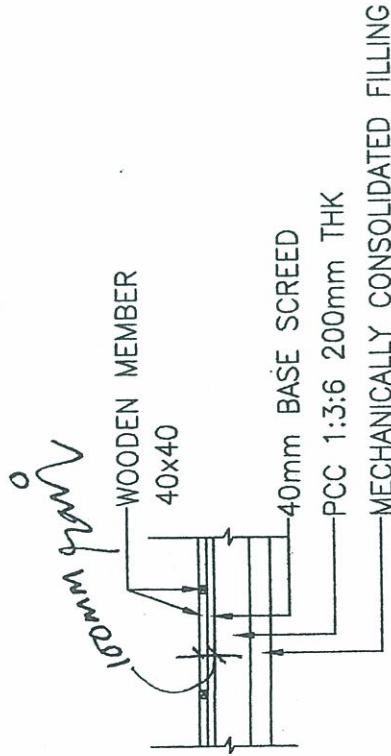
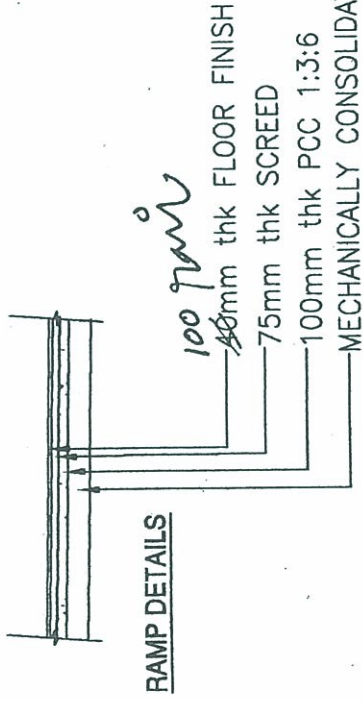

 M. S. Singh
 FOR JETIVAI ENGINEERS

 Prohibited.

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NOTE:
FOR RETAINING WALL @ STEPS AREA DETAILS SAME AS AUDITORIUM DETAILS

CENTRE FOR ARCHITECTURAL
RESEARCH AND DESIGN
ISSUED FOR
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ADVANCE COPY DOCUMENTATION
FINAL DWG/

DATE OF ISSUE: 10-8-20
REVISION No:
THIS DWG SUPERCEDES REV. No:



CONSULTANTS	KRTTI STRUCTURAL ENGINEERS 24, VIJAYARAM ST, I.M.A.C.R. MAHARAS 600 017 TEL: 24344312, 24328986 email - norendran@krtti.co.uk	PROJECT	KALAKSHETRA Koothambalam - Entry Level Plan	TITLE	RAMP, STAGE & STEPS DETAILS	JOB NO	NEW	DRG. NO
						DATE	10-08-10	001
						SCALE	1:25	01000
						DESIGNED	R.V. MARENDRAN	S
						CHECKED	R.V. MARENDRAN	R
						DRAWN	GSY	

File Name: \\SERVER\PROJECTS\PROJECTS\CARD\FOUNDATION DETAILS.DWG

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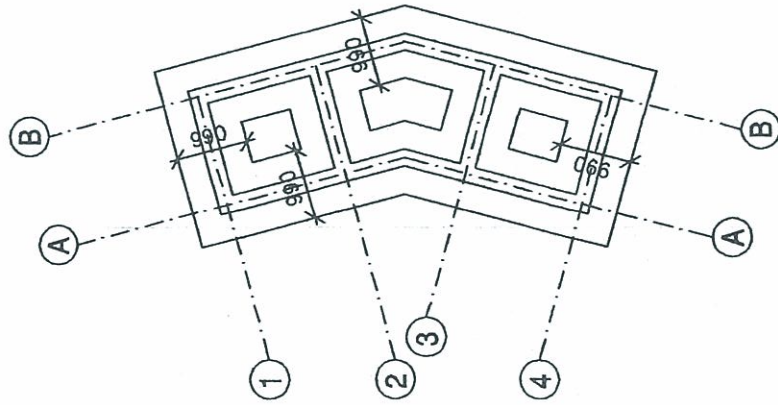
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NOTES:-

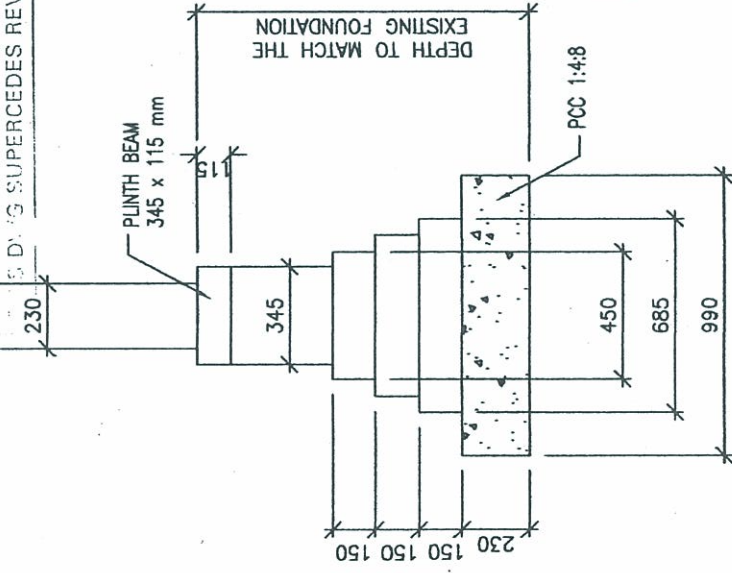
1. All dimensions in Feet & Inches.
2. Dimensions to be read, not scaled.
3. Clear cover to the main reinf. as follows
 - a) Col 25mm for 12mm bars & 40mm for >12mm
 - b) Footings 50mm
 - c) Plinth beams 30mm
4. Use M20 Conc & Fe415 unless specified otherwise.
5. Leave dowels wherever necessary.
6. Foundation depth-as per Existing Footing
7. Footing CL to coincide with Column CL.

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 ADVANCE COPY/DESIGNATION FINAL-DWG/

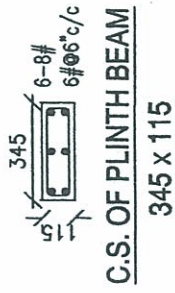
DATE OF ISSUE: 10.8.10
 REVISION No: -
 SUPERCEDES REV. No: -



FOUNDATION LAYOUT



TYPICAL FOOTING DETAIL



C.S. OF PLINTH BEAM
 345 x 115

10/8/10
10/8/10
6 inch below column
gmm

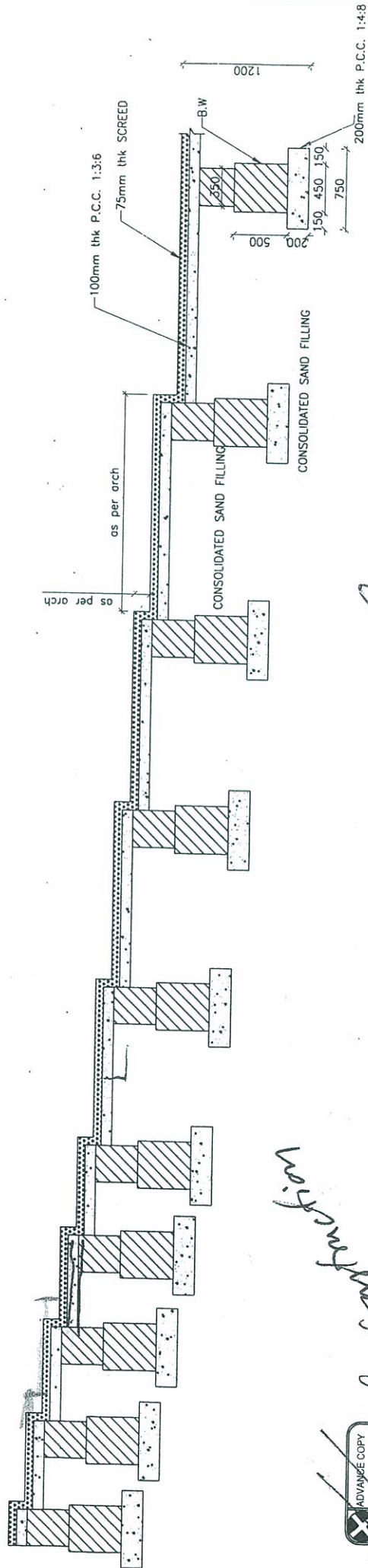
CONSULTANTS KRITI STRUCTURAL ENGINEERS 24, VAIDYARAMA ST., T.NAGAR, MADRAS 600 017 TEL:24344312 24328896 email - narendranrv@yahoo.co.uk	PROJECT	KALAKSHETRA Koothambalam - Entry Level Plan		TITLE	FOUNDATION DETAILS			JOB NO	SR-685-2010	DRG NO	001
	DATE		10-08-10	SCALE	1:100,50:25	DESIGNED	R.V.MARENDRA	CHECKED	R.V.MARENDRA	DRAWN	GCV
File Name: \\SERVER\E\PROJECTS\PROJECTS\KALASHETRA-685\002-FOUNDATION DETAILS © BACK SIDE TOILET.DWG											

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For levels follow Architectural drawings.

Screed is below finished level by 40mm.



SECTION ALONG XX

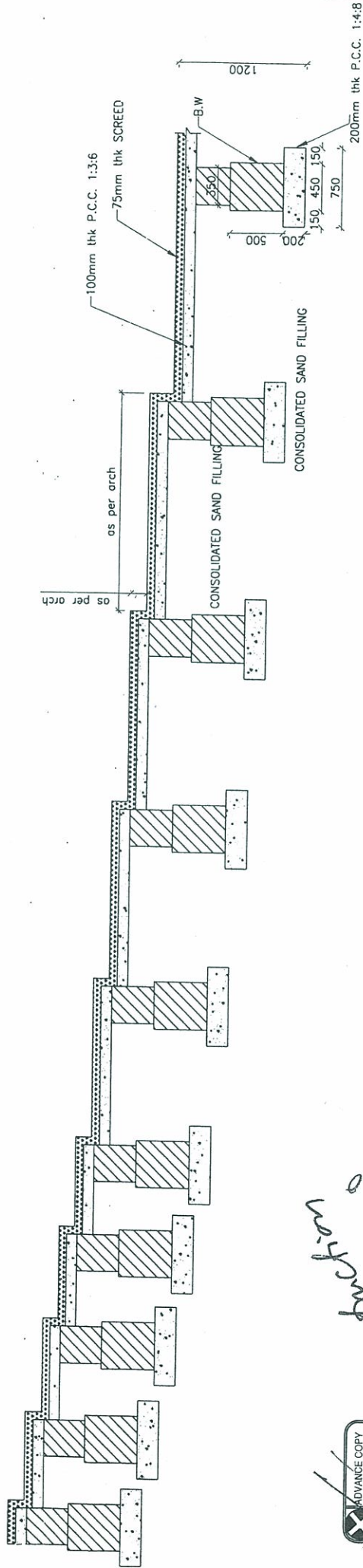
Handwritten notes:
 7/8/10
 for construction
 5/8/10
 154
 15/8/10
 R.V. Narendran
 R.V. Narendran

CONSULTANTS KRITI STRUCTURAL ENGINEERS 24, VADYARAMA ST., NAGAR, MADRAS 600 017 TEL: 24344312, 24328895 email - narendranv@yahoo.co.uk	Architects: Centre for Architectural Research & Design Architecture & Interior & Landscape 10 - A, First street, Dharmalakshmi colony, Vadapalani, Chennai - 600026 Telephone : + 91 44 23623972 +91 44 23622633 . email : car@vsnl.com	PROJECT	KALAKSHETRA Koothambalam - Entry Level Plan	TITLE	FOUNDATION DETAILS					
		JOB NO	NEW	DATE	02-08-10	SCALE	1:25	DESIGNED	R.V.NARENDRAN	CHECKED
				DRG NO	001					010F01

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For levels follow Architectural drawings.

Screed is below finished level by 40mm.



SECTION ALONG XX

For construction
5/5/10
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CONSULTANTS K.RITI STRUCTURAL ENGINEERS 24, VADYARANA ST., MACAR, MADRAS 600 017 TEL:24344312, 24328895 email - rorandranv@yahoo.co.uk	PROJECT KALAKSHETRA Kodihambalam - Entry Level Plan	TITLE FOUNDATION DETAILS	JOB NO	NEW
			DATE	02-08-10
			SCALE	1:25
			DESIGNED	R.V.NARENDHRAN
			CHECKED	R.V.NARENDHRAN
			DRG. NO	001
				010F01

Annexure (III)

			Tender qty				Executed qty			plus	minus	Total	Total
			QTY	unit	rate	Total	qty	Rate	Amount			Plus	minus
13 1	4 4	Providing and fixing Mangalore tiles of size 400 x 240 mm, so as to cover an area of 320 x 210 mm, the lap should be not less than 75 mm.	200	Sqm	910	182000	1016.9	910	925406.3	816.93		74340 6.3	
13 2	4 5	Fixing mangalore tiles of size 400x240mm so as to cover an area of 320x210mm. Te lap should be not less than 75mm. Provide for necessary mortor jointing, chasing in walls, tile cutting, tile wastage etc.	2500	Sqm	350	875000	995.32	350	348362		1504. 68		526638
						1057000			1273768. 3			21676 8.3	
		Plus							216768.3				

(Signature)
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Annexure (II)

			Tender qty				Executed qty		
			QTY	unit	rate	Total	qty	Rate	Amount
104	29	Providing and laying plain cement concrete 1:3:6 with coarse sand, laid to required thickness (not exceeding 50mm) and slopes, in roof screedings, floor screedings and similar locations, laid in panels not exceeding 4 sqm., consolidated, finished fair and cured complete : Floor screedings	57	Cum	3700	210900	115.55	3700	427535
		difference in plus				216635			

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LSI

Work	Executed Value of Contract	Estimated Value of Executed Work as per CPWD	% Variation			
Civil	1,41,05,756.34	1,05,96,194.00	Plus 33.12%	3509562.34	33.12%	33.12
Additional Civil Work	77,60,768.00	69,52,845.00	Plus 11.62%	807923.00	11.62%	11.62
Roof Insulation	32,71,750.00	25,78,180.00	Plus 26.90%	693570.00	26.90%	26.90
Electrical Installation	18,78,510.00	20,53,205.00	Minus 8.51%	-174695.00	-8.51%	8.51
Additional Electrical work	6,73,177.00	5,52,041.00	Plus 21.94%	121136.00	21.94%	21.94
HVAC	88,37,379.90	83,79,323.00	Plus 5.47%	458056.90	5.47%	5.47
Total	3,65,27,341.24	3,11,11,788.00	Plus 15.09%			99.05
						90.54
						15.09

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5. HVAC ELECTRICAL PANEL

	Supply	Labour	UNIT	Supply	Labour	Total Supply	Total Labour	CPWD	justified cost
1 CHILLER PANEL									
Supplying, terminating, connecting & commissioning the above underground cables with double compression type glands with all sockets etc complete									
a 3.5c x 50sqmm XLPE AL UG cable	0	0	Nos.	385	92	0	0		0
b 3.5c x 35sqmm XLPE AL UG cable	0	0	Nos.	308	69	0	0		0
c 4C x 16 Sqmm XLPE AL UG Cable	0	0	Nos.	231	46	0	0		0
d 4C X 4Sqmm XLPE Cu Cable	0	0	Nos.	182	21	0	0		0
e 4C x 2.5 Sqmm XLPE Cu UG Cable	0	0	Nos.	182	18	0	0		0
7 CABLE TRAY									
Supply, fabricating erecting testing and commissioning of ladder type cable tray with box channels for supporting cable tray and with all standard accessories etc., complete									
i 150 x 50 x 1.6mm Ladder Type Cable Tray	0	0	Mtrs	275	86	0	0		0
Cable tray rate inclusive of all supports , earth flat complete									
Note :									
8 EARTHING									
Supplying, laying and connecting 25 x 6 mm GI Flat laid in open fashion with necessary clamps,screws, interlinks etc for earthing of Chiller Panel /Chillers	0	0	Mtrs	50	17	0	0		0
a Supplying, laying and connecting of 2Runs of 10SWG Cu wire laid in open Fashion with necessary interlinks etc for earthing of AHU/Fans/Pumps etc	0	0	Mtrs	132	17	0	0		0
Sub Total						258,888	0		
VAT @ 4% applicable on supply of material						0			
VAT @ 12.5% applicable on supply of material						32,361			
Service Tax @ 10.3% applicable on Erection							0		
Total						291,249	0		168000

5. HVAC ELECTRICAL PANEL

	Supply	Labour	UNIT	Supply	Labour	Total Supply	Total Labour	CPWD justified cost
1 CHILLER PANEL With Adjustable Overload and fixed Short circuit relays (Incoming to Three Stage Ambiator Supply fans) with star delta starter, Push button suitable for 15KW 1No 2)20A TPN MPCB 16KA(Ics) Capacity -----2 Sets With Adjustable Overload and fixed Short circuit relays (Incoming to Three Stage Ambiator Scavenger Fan) with DOL Starter & Push button 3)20A TPN MPCB 16KA(Ics) Capacity -----2 Sets With Adjustable Overload and fixed Short circuit relays (Incoming to 6400CFM AHU) 4) 63 A TPN MCCB 16KA(Ics) Capacity -----2Sets for Spare NOTE: 01.The withstanding capacity mentioned is Ics only circuit relays BUSBAR : ALUMINIUM RATING : 125 AMPS The Phase Bus bar shall be 1R x 40 x 6mm. and the Neutral bar shall be 40 x 3 mm. The Earth Bus bar shall be 2 Runs of 25 x 3 mm.								
2 ISOLATORS Supply installation testing and commissioning of Isolator for Chiller with all standard accessories complete i 125Amps for Chiller ii 100Amps for Chiller	0	0	Set	7875	550	0	0	0
3 VARIABLE FREQUENCY DRIVE Supply installation testing and commissioning of Variable Frequency Drive for following capacity with all standard accessories complete a VFD Suitable for 4.0KW AHU b VFD Suitable for 3.0KW Pumps	2	0	Set	53088	2200	106176	0	36000
5 CABLES Supply Laying, connecting and commissioning the following 1.1KV Grade A/VFV/YFV/YWV Under Ground cables with necessary clamps screws etc. and the cables shall be laid in trench/clamped along wall/column/laid in cable tray etc(the rates inclusive of suitab	3	0	Set	50904	2200	152712	0	32000
a 3.5c x 50Sqmm XLPE AL UG cable(for incoming to Chiller)	0	0	Mtrs	154	21	0	0	0
b 3.5c x 35Sqmm XLPE AL UG cable(for incoming to Chiller)	0	0	Mtrs	119	21	0	0	0
c 4C x 16 Sqmm XLPE AL UG Cable (for incoming to Three Stage	0	0	Mtrs	79	21	0	0	0
d 4C X 4Sqmm XLPE Cu Cable (for Pumps & AHU'S)	0	0	Mtrs	127	21	0	0	0
e 4C x 2.5 Sqmm XLPE Cu UG Cable (for Water Circulation Pumps)	0	0	Mtrs	94	21	0	0	0
6 TERMINATION								

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5. HVAC ELECTRICAL PANEL

	Supply Qty	Labour Qty	UNIT	Supply Rate	Labour Rate	Total	Total	CPWD justified cost
						Supply	Labour	
1 CHILLER PANEL								
supply, installation, testing and commissioning of MV cubicle type suitable for 415V, 3-phase, 4 wire system, compatible to BMS totally enclosed floor mounted type, dust, damp and vermin proof main distribution board made out of 14 SWG MS sheet complete								
Incoming								
1) 250Amps TPN MCCB 36kA, with adjustable Overload and fixed short circuit relays. earth fault relay etc -----1 Set								
Outgoing								
1) 125A TPN MCCB 25KA(lcs) Capacity -----1 Set With Adjustable Overload and fixed Short circuit relays (Incoming to 36TR Air Cooled Scroll Chiller)								
2) 100A TPN MCCB 25KA(lcs) Capacity -----2 Sets With Adjustable Overload and fixed Short circuit relays (Incoming to 24TR Air Cooled Scroll Chiller)								
3) 16 A TPN MPCB 16KA(lcs) Capacity -----3Sets With Adjustable Overload and fixed Short circuit relays (Incoming to Primary Pumps)								
4) 10 A TPN MPCB 16KA(lcs) Capacity -----2Sets With Adjustable Overload and fixed Short circuit relays (Incoming to Water Circulation Pumps) with DOL Starter & Push button								
5) 63 A TPN MCCB 16KA(lcs) Capacity -----2Sets for Spare With Adjustable Overload and fixed Short circuit relays								
NOTE:								
01. The withstanding capacity mentioned is lcs only								
circuit relays								
BUSBAR : ALUMINIUM								
RATING : 250 AMPS								
The Phase Bus bar shall be 1R x 40 x 10mm. and the Neutral bar shall be 40 x 6 mm.								
The Earth Bus bar shall be 2 Runs of 25 x 6 mm.	0	0	Set	84000	5500	0	0	0
2 AHU PANEL								
supply, installation, testing and commissioning of MV cubicle type suitable for 415V, 3-phase, 4 wire system, compatible to BMS totally enclosed floor mounted type, dust, damp and vermin proof main distribution board made out of 14 SWG MS sheet complete								
Incoming								
1) 125Amps TPN MCCB 36kA, with adjustable Overload and fixed short circuit relays. earth fault relay etc -----1 Set								
Outgoing								
1) 63A TPN MCCB 16KA(lcs) Capacity -----1 Set								

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4. LOW SIDE

Sl. No.	Description	Qty (supply)	Qty (labour)	Unit	Supply Rate	Labour Rate	Total Supply	Total Labour	CPWD Justified cost
COMPUTER SELECTION SHOULD BE ATTACHED									
53.01	Supply and installation of supply air silencer measurement as per ((W+H)2L)	65	65	Sq.m	2415	523	156975	33995	2415 156975
53.02	Supply and installation of return air silencer measurement as per ((W+H)2L)	18	0	Sqmt	2415	523	43470	0	2415 43470
53.03	Supply and installation of Fresh air Silencer as per ((W+H)2L)	0	0	Sqmt	2415	523	0	0	0
54	Thermal Insulation (Ducting) using 6 mm Thk class o, Nitrile rubber material, joints sealed with adhesive tape.	500	500	Sq.m	120	99	60000	49500	180 90000
55	Thermal Insulation (Ducting) using 9 mm Thk class o, Nitrile rubber material, joints sealed with adhesive tape.	70	70	Sq.m	180	99	12600	6930	200 14000
56	Thermal Insulation (Ducting) using 13 mm Thk class o, Nitrile rubber material, joints sealed with adhesive tape.	200	200	Sq.m	259	99	51800	19800	250 50000
57	Thermal Insulation (Ducting) using 16 mm Thk class o, Nitrile rubber material, joints sealed with adhesive tape.	0	0	Sq.m	319	121	0	0	0
58	Acoustic Insulation using / Armasound with 15 mm thick with micro ban	800	800	Sq.m	1034	121	827200	96800	1034 827200
59	HVLS Fan (High Volume Low Speed fan)	1	1	No	304274.3	6000	304274.3	6000	300000 300000
	Sub Total						2,572,826	278,391	
	VAT @ 4 % applicable on supply of material						56,085		
	VAT @ 12.5% applicable on supply of material						146,338		
	Service Tax @ 12.36% applicable on Erection							34,409	
	Total						2,775,249	312,800	2781023

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4. LOW SIDE

Sl. No.	Description	Qty (supply)	Qty (labour)	Unit	Supply Rate	Labour Rate	Total Supply	Total Labour	CPWD Justified cost
44	Supply and fixing of Al power coated return air Swirl Diffuser without VCD	0	0	Nos	1501	112	0	0	0
45	Supply and fixing of Al power coated linear supply air grill with VCD	0	0	Sq.m	4233	560	0	0	0
46	Supply and fixing of Al power coated linear return air grill without VCD	0	0	Sq.m	2794	560	0	0	0
47	Supply and fixing of Jet Nozzle (650CFM Each)	0	0	Nos	3745	84	0	0	0
48	Supply and Fixing - Volume Control Dampers - G. I. Painted	0	0	Sq.m	3454	560	0	0	0
49	Supply and Fixing - Collar Damper - M.S. Powder Coated	0	0	Sq.m	1439	560	0	0	0
50	Supply and Fixing - Motorized Fire Dampers	0	0	Sq.m	6133	625	0	0	0
51	Supply and Fixing - Actuators with Control Panel for above fire dampers, complete with all accessories like Actuator, control panel etc and any necessary requirement which can perform the controlling the Damper. It shall be integrated with VFD & SHOULD BE	0	0	Nos	7200	375	0	0	0
52	Supply and fixing of canvass connection	0	0	Sq.m	2568	392	0	0	0
53	Attenuators Sound Attenuators for Supply, Return air Duct & Fresh air duct Sound Attenuators of Dissipative type to be provided on the supply air duct entering the AHU. Sound Attenuators shall consist of outer casing with ZG GI Sheets, sound absorbing material and internal baffles, splitters and supports as explained in the technical specifications. Casing shall be of galvanized steel of not less than 20G in thickness. Casings shall be tested to 150mmwg and shall show no leakage or distortion in this condition. Sound absorbing material shall be high density fibre glass held in place with at least 5% compression to prevent voids due to settling. Absorption material density shall be minimum 48 kg/cum. Fibreglass faced with minimum 26 g perforated galvanized shee								

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4. LOW SIDE

Sl. No.	Description	Qty (supply)	Qty (labour)	Unit	Supply Rate	Labour Rate	Total Supply	Total Labour	CPWD Justified cost
19	Supply , installation , testing and commissioning of Air Separator with Compression Tank of suitable capacity, made up of Suitable gauge MS sheet insulated with 50mm TF quality HDPE and sand cement plastering complete with necessary connections etc. etc.	1	0	set	107321	9520	107321	0	100000 100000
20	Acoustic insulation for AHU room using / fibre glass with 50 mm thick 24 kg / m ³ with Rigid board covered with RP tissue & 26 g Al perforated sheet etc.	0	0	Sq.m	480	169	0	0	0
21	Fresh Air arrangement (Wall cowl, bird screen with F. A.D.)	0	0	Sq.m	2878	560	0	0	0
22	Fresh Air Louver	0	0	Sq.m	4893	560	0	0	0
23	Ducting Ducting - supply and install GI sheet metal duct, supports, adjustable splitter , guide vanes including air balancing with necessary connections etc.								
23.01	18 Gauge	63	63	Sq.m	728	168	45864	10584	1257 79191
23.02	20 Gauge	40	40	Sq.m	583	168	23320	6720	1004 40160
23.03	22 Gauge	313	313	Sq.m	540	112	169020	35056	890 278570
23.04	24 gauge	50	50	Sq.m	391	112	19550	5600	725 36250
19	Supply and Install GI Round duct for the following sizes								
	630mm Dia	0	0	RMT	1539	399	0	0	0
	560mm Dia	12	12	RMT	1367	355	16404	4260	1060 12720
	450mm Dia	11	11	RMT	1098	286	12078	3146	310 3410
	310mm Dia	0	0	RMT	757	196	0	0	0
42	Supply and fixing of Al power coated Continuous linear grill 100mm wide 150mm wide	0	0	RMT	280	56	0	0	0
		0	0	RMT	419	84	0	0	0
43	Supply and fixing of Al power coated Swirl Diffuser with VCD along with plenum and necessary connections	0	0	Nos	2036	202	0	0	0

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4. LOW SIDE

Sl. No.	Description	Qty (supply)	Qty (labour)	Unit	Supply Rate	Labour Rate	Total Supply	Total Labour	CPWD Justified cost
11	Supply, installation, testing and commissioning of insulated Non Return Valve complete with flanges, bolts, nuts, gaskets etc., with 1.0 rating /relevant code / equiv. Swing check type, JS 210 Gr FG 260 body, JS 210 Gr FG 260 Disc, 13% Cr-SS Discs								
11.01	50 mm dia	3	0	Nos	2483	448	7449	0	2360 7080
12	Supply & Installation of 4" Dia Pressure Gauges with 3/8" Syphon and ball Valve	0	0	Nos.	696	168	0	0	0
13	Supply & Installation of Thermo well with stem type thermometer	10	0	Nos.	749	168	7490	0	750 7500
14	Supply & Installation of 3/8" Air Purge valves with Ball Valve	10	0	Nos.	749	224	7490	0	750 7500
15	Supply, installation, testing and commissioning of Drain valves								
15.01	25 mm dia	10	0	Nos	872	224	8720	0	900 9000
16	Supply, installation, testing and commissioning of Ball valve with & without v-strainer								
16.01	25 mm dia	0	0	Nos	2286	448	0	0	0
16.02	32 mm dia	0	0	Nos	6494	573	0	0	0
17	Supply, installation of metallc Bellows								
17.01	50mm dia	12	0	Nos	4494	448	53928	0	4000 48000
18	Drain Piping Insulated drain piping GI screwed 25mm from AHU drain pans, chilled water pump glands, to nearest floor drain, complete with U-trap and necessary fittings with 25mm EPS TF and SCP								
18.01	40 NB	0	0	Mtrs	401	185	0	0	0
	25 mm thick EPS insulation								
18.02	32 NB	0	0	Mtrs	363	159	0	0	0
	25 mm thick EPS insulation								
18.03	25 NB	0	0	Mtrs	308	134	0	0	0
	25 mm thick EPS insulation								

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(17)

4. LOW SIDE

Sl. No.	Description	Qty (supply)	Qty (labour)	Unit	Supply Rate	Labour Rate	Total Supply	Total Labour	CPWD Justified cost
7	Supply and installation of the following Pre Insulated MS pipes to IS:3589 with puff insulation covering with HDPE and specified wall thickness of 8mm, cut to required lengths and installed with all welded joints, the necessary fittings like flanges also								
7.01	25 mm dia	0	0	Mtrs	587	75	0	0	0
7.02	32 mm dia	20	0	Mtrs	600	89	12000	0	666
7.03	40 mm dia	80	0	Mtrs	719	110	57520	0	843
7.04	50 mm dia	120	0	Mtrs	925	138	111000	0	1034
7.05	65 mm dia	60	0	Mtrs	1132	179	67920	0	1201
7.06	80 mm dia	100	0	Mtrs	1405	221	140500	0	1458
									145800
8	Supply, installation, testing and commissioning of insulated cast iron Butterfly Isolation Valves with Insulation complete with gaskets, flangers etc., PN 16 class rating IS 210 Grfg 260body, Ductile iron ASTM A 536 Gr.65-45-12 Duct. EPDM / Buna -MS22								
8.01	25 mm dia	0	0	Nos	2496	250	0	0	0
8.02	32 mm dia	0	0	Nos	3553	287	0	0	0
8.03	40 mm dia	0	0	Nos	3684	358	0	0	0
8.04	50 mm dia	11	0	Nos	3405	448	37455	0	3269
8.05	65 mm dia	0	0	Nos	4428	650	0	0	35959
8.06	80 mm dia	0	0	Nos	5108	800	0	0	0
9	Supply /installation, testing and commissioning of Pressure independent 2-Way Motorised diverting /mixing valve cum balancing valve complete with Transformer, linkage mechanism, modtrolmotor, cables, rheostat etc. insulation, concrete etc. R.ac.norc								
9.01	25 mm dia	0	0	Nos	41194	250	0	0	0
9.02	32 mm dia	1	0	Nos	36758	287	36758	0	36000
9.03	40 mm dia	3	0	Nos	55587	358	166761	0	55000
9.04	50 mm dia	0	0	Nos	65360	500	0	0	165000
10	Supply, installation, testing and commissioning of insulated y type with fabricated steel body strainer complete with flanges, bolts, nuts, gaskets etc., with mesh less than 20, 1.6mm thick screen, CI 210 FG 260 body, with PN 16 rating, SS304 Fltr								
10.01	50 mm dia	3	0	Nos	2653	448	7959	0	3446
									10338

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4. LOW SIDE

Sl. No.	Description	Qty (supply)	Qty (labour)	Unit	Supply Rate	Labour Rate	Total Supply	Total Labour	CPWD Justified cost
COMPUTER SELECTION SHOULD BE ATTACHED									
53.01	Supply and installation of supply air silencer measurement as per ((W+H)2L)	65	65	Sq.m	2415	523	156975	33995	2415 156975
53.02	Supply and installation of return air silencer measurement as per ((W+H)2L)	18	0	Sqmt	2415	523	43470	0	2415 43470
53.03	Supply and installation of Fresh air Silencer as per ((W+H)2L)	0	0	Sqmt	2415	523	0	0	0
54	Thermal Insulation (Ducting) using 6 mm Thk class o, Nitrile rubber material, joints sealed with adhesive tape.	500	500	Sq.m	120	99	60000	49500	180 90000
55	Thermal Insulation (Ducting) using 9 mm Thk class o, Nitrile rubber material, joints sealed with adhesive tape.	70	70	Sq.m	180	99	12600	6930	200 14000
56	Thermal Insulation (Ducting) using 13 mm Thk class o, Nitrile rubber material, joints sealed with adhesive tape.	200	200	Sq.m	259	99	51800	19800	250 50000
57	Thermal Insulation (Ducting) using 16 mm Thk class o, Nitrile rubber material, joints sealed with adhesive tape.	0	0	Sq.m	319	121	0	0	0
58	Acoustic Insulation using / Armasound with 15 mm thick with micro ban	800	800	Sq.m	1034	121	827200	96800	1034 827200
59	HVLS Fan (High Volume Low Speed fan)	1	1	No	304274.3	6000	304274.3	6000	300000 300000
	Sub Total						2,572,826	278,391	
	VAT @ 4% applicable on supply of material						56,085		
	VAT @ 12.5% applicable on supply of material						146,338		
	Service Tax @ 12.36% applicable on Erection							34,409	
	Total						2,775,249	312,800	2781023

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4. LOW SIDE

Sl. No.	Description	Qty (supply)	Qty (labour)	Unit	Supply Rate	Labour Rate	Total Supply	Total Labour	CPWD Justified cost
44	Supply and fixing of AI power coated return air Swirl Diffuser without VCD	0	0	Nos	1501	112	0	0	0
45	Supply and fixing of AI power coated linear supply air grill with VCD	0	0	Sq.m	4233	560	0	0	0
46	Supply and fixing of AI power coated linear return air grill without VCD	0	0	Sq.m	2794	560	0	0	0
47	Supply and fixing of Jet Nozzle (650CFM Each)	0	0	Nos	3745	84	0	0	0
48	Supply and Fixing - Volume Control Dampers - G. I. Painted	0	0	Sq.m	3454	560	0	0	0
49	Supply and Fixing - Collar Damper - M.S. Powder Coated	0	0	Sq.m	1439	560	0	0	0
50	Supply and Fixing - Motorized Fire Dampers	0	0	Sq.m	6133	625	0	0	0
51	Supply and Fixing - Actuators with Control Panel for above fire dampers, complete with all accessories like Actuator, control panel etc and any necessary requirement which can perform the controlling the Damper. It shall be integrated with VFD & SHOULD BE	0	0	Nos	7200	375	0	0	0
52	Supply and fixing of canvass connection	0	0	Sq.m	2568	392	0	0	0
53	Attenuators Sound Attenuators for Supply, Return air Duct & Fresh air duct Sound Attenuators of Dissipative type to be provided on the supply air duct entering the AHU. Sound Attenuators shall consist of outer casing with ZG CI Sheets, sound absorbing material and internal baffles, splitters and supports as explained in the technical specifications. Casing shall be of galvanized steel of not less than 20G in thickness. Casings shall be tested to 150mmwg and shall show no leakage or distortion in this condition. Sound absorbing material shall be high density fibre glass held in place with at least 5% compression to prevent voids due to settling. Absorption material density shall be minimum 48 kg/cum. Fibreglass faced with minimum 26 g perforated galvanized sheet								

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4. LOW SIDE

Sl. No.	Description	Qty (supply)	Qty (labour)	Unit	Supply Rate	Labour Rate	Total Supply	Total Labour	CPWD Justified cost
19	Supply , installation , testing and commissioning of Air Separator with Compression Tank of suitable capacity, made up of Suitable gauge MS sheet insulated with 50mm TF quality HDPE and sand cement plastering complete with nine connections etc.	1	0	set	107321	9520	107321	0	100000 100000
20	Acoustic insulation for AHU room using / fibre glass with 50 mm thick 24 kg / m ³ with Rigid board covered with RP tissue & 26 g Al perforated sheet etc.	0	0	Sq.m	480	169	0	0	0
21	Fresh Air arrangement (Wall cowl, bird screen with F.A.D.)	0	0	Sq.m	2878	560	0	0	0
22	Fresh Air Louver	0	0	Sq.m	4893	560	0	0	0
23	Ducting Ducting - supply and install GI sheet metal duct, supports, adjustable splitter , guide vanes including air balancing with necessary connections etc.								
23.01	18 Gauge	63	63	Sq.m	728	168	45864	10584	1257 79191
23.02	20 Gauge	40	40	Sq.m	583	168	23320	6720	1004 40160
23.03	22 Gauge	313	313	Sq.m	540	112	169020	35056	890 278570
23.04	24 gauge	50	50	Sq.m	391	112	19550	5600	725 36250
19	Supply and Install GI Round duct for the following sizes								
	630mm Dia	0	0	RMt	1539	399	0	0	0
	560mm Dia	12	12	RMt	1367	355	16404	4260	1060 12720
	450mm Dia	11	11	RMt	1098	286	12078	3146	310 3410
	310mm Dia	0	0	RMt	757	196	0	0	0
42	Supply and fixing of Al power coated Continuous linear grill								
	100mm wide	0	0	RMt	280	56	0	0	0
	150mm wide	0	0	RMt	419	84	0	0	0
43	Supply and fixing of Al power coated Swirl Diffuser with VCD along with plenum and necessary connections	0	0	Nos	2036	202	0	0	0

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4. LOW SIDE

Sl. No.	Description	Qty (supply)	Qty (labour)	Unit	Supply Rate	Labour Rate	Total Supply	Total Labour	CPWD Justified cost
11	Supply, installation, testing and commissioning of insulated Non Return Valve complete with flanges, bolts, nuts, gaskets etc., with 1.0 rating /relevant code / equiv. Swing check type, IS 210 Gr FG 260 body, IS 210 Gr FC 260 Disc, 13% Cr-SS Discs								
11.01	50 mm dia	3	0	Nos	2483	448	7449	0	2360
12	Supply & Installation of 4" Dia Pressure Gauges with 3/8" Syphon and ball Valve	0	0	Nos.	696	168	0	0	0
13	Supply & Installation of Thermo well with stem type thermometer	10	0	Nos.	749	168	7490	0	750
14	Supply & Installation of 3/8" Air Purge Valves with Ball Valve	10	0	Nos.	749	224	7490	0	750
15	Supply, installation, testing and commissioning of Drain valves								
15.01	25 mm dia	10	0	Nos	872	224	8720	0	900
16	Supply, installation, testing and commissioning of Ball valve with & without Y-strainer								
16.01	25 mm dia	0	0	Nos	2286	448	0	0	0
16.02	32 mm dia	0	0	Nos	6494	573	0	0	0
17	Supply, installation of metallic Bellows								
17.01	50mm dia	12	0	Nos	4494	448	53928	0	4000
18	Drain Piping Insulated drain piping GI screwed 25mm from AHU drain pans, chilled water pump glands, to nearest floor drain, complete with U-trap and necessary fittings with 25mm EPS TF and SCP								
18.01	40 NB								
	25 mm thick EPS insulation	0	0	Mtrs	401	185	0	0	0
18.02	32 NB								
	25 mm thick EPS insulation	0	0	Mtrs	363	159	0	0	0
18.03	25 NB								
	25 mm thick EPS insulation	0	0	Mtrs	308	134	0	0	0

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4. LOW SIDE

Sl. No.	Description	Qty (supply)	Qty (labour)	Unit	Supply Rate	Labour Rate	Total Supply	Total Labour	CPWD Justified cost
7	Supply and installation of the following Pre Insulated MS pipes to IS:3589 with puff insulation covering with HDPE and specified wall thickness of 8mm, cut to required lengths and installed with all welded joints, the necessary fittings like flanges etc.								
7.01	25 mm dia	0	0	Mtrs	587	75	0	0	0
7.02	32 mm dia	20	0	Mtrs	600	89	12000	0	666
7.03	40 mm dia	80	0	Mtrs	719	110	57520	0	843
7.04	50 mm dia	120	0	Mtrs	925	138	111000	0	1034
7.05	65 mm dia	60	0	Mtrs	1132	179	67920	0	1201
7.06	80 mm dia	100	0	Mtrs	1405	221	140500	0	1458
8	Supply, installation, testing and commissioning of insulated cast iron Butterfly Isolation Valves with Insulation complete with gaskets, flangers etc. PN 16 class rating IS 210 Grfg 260body, Ductile iron ASTM A 536 Gr.65-A5-12 Duct FDDM / Buna MS3								
8.01	25 mm dia	0	0	Nos	2496	250	0	0	0
8.02	32 mm dia	0	0	Nos	3553	287	0	0	0
8.03	40 mm dia	0	0	Nos	3684	358	0	0	0
8.04	50 mm dia	11	0	Nos	3405	448	37455	0	3269
8.05	65 mm dia	0	0	Nos	4428	650	0	0	35959
8.06	80 mm dia	0	0	Nos	5108	800	0	0	0
9	Supply, installation, testing and commissioning of Pressure Independent 2-Way Motorised diverting /mixing valve cum balancing valve complete with Transformer, linkage mechanism, modutroimotor, cable, thermocouple insulation, control etc. & cable.								
9.01	25 mm dia	0	0	Nos	41194	250	0	0	0
9.02	32 mm dia	1	0	Nos	36758	287	36758	0	36000
9.03	40 mm dia	3	0	Nos	55587	358	166761	0	55000
9.04	50 mm dia	0	0	Nos	65360	500	0	0	165000
10	Supply, installation, testing and commissioning of insulated Y type with fabricated steel body strainer complete with flanges, bolts, nuts, gaskets etc, with mesh less than 20, 1.6mm thick screen, CI 210 FG 260 body with DN 1.0 rubber SS204 Flts								
10.01	50 mm dia	3	0	Nos	2653	448	7959	0	3446
									10338

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3. AIR HANDLING UNITS

Sl. No.	Description	Supply QTY	Labour QTY	Unit	Supply	Labour	Total Supply	Total Labour	CPWD Justified cost
	Supply and installation of Double skin Ceiling suspended AHU's for the following Specifications and Capacities, including, Fan Motors, Pre Filters, 6 Row Deep Coils with Supports etc. (Flow rate for AHU is 1.9 GPM per TR).								
1	Ground Floor								
4.10	15TR / 3400CFM / 40 mm TSP / 6 Row	1	1	Nos	67611	8000	67611	8000	86000
4.20	12TR / 3800CFM / 40 mm TSP / 6 Row	1	1	Nos	72440	6853	72440	6853	89000
5	LOPEX - Three Stage Ambiator								
	Supply, Installation & commissioning of Floor mounted Three Stage Ambiator unit as per the tender Specifications and Capacities, including, Supply Fan and Exhaust fan, Motors, Pre Filters, Heat Exchanger, Pumps, Spray arrangement with Supports etc.								
5.1	33000CFM	1	1	Nos	2374439	138510	2136995	96957	2400000
	Supply & Installation of factory made Split Type Air conditioner units complete with centrifugal blower cooling coil etc, enclosed the insulation along with matching air cooled condenser with Rotary compressor all in with microprocessor control & Remote								
6.1	1.5TR	0	0	Nos	29993	2300	0	0	
	Sub Total						2,601,960	127,810	
	VAT @ 12.5% applicable on supply of material						325,245		
	Service Tax @ 12.36% applicable on Erection							15,797	
	Total						2,927,205	143,607	2884800

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3. AIR HANDLING UNITS

Sl. No.	Description	Supply QTY	Labour QTY	Unit	Supply	Labour	Total Supply	Total Labour	CPWD	Justified cost
3	Floor Mounted Air Handling Units 1) Supply, installation, testing and commissioning of Double skin floor mounted AHU's for the following Specifications and Capacities, 50mm thick PUF insulation With thermal break FAN : Plug type fan Efficiency of fan more than 75% Fan outlet - below 6m/sec Fan motor should be suitable for variable frequency drive VFD with BMS compatibility and additional I/O points Mixing box for return air Insulated with Arma Sound Inbuilt Silencer in the return air side COIL : 6row deep Cooling Coil Gross coil velocity - below 420fpm 20micron Pre filter Canvass Connection with mouth dammer SS Drain Tray Inspection glass Fan Safety Switch at the door Service light PF contact at the incomer of the panel for BMS ON / OFF status and monitoring through BMS. Common thermostat to be considered Remote Wiring for operating the AHU's Electrical wiring, control wiring, motors & Earthing Including necessary Civil works as per site condition	2	2	Nos	162457	8000	324914	16000	154900	309800
3.1	TSP : 50mm of wg LAT = 10.5 Deg C DBT EAT = 25.0 Deg C DBT / 21.66 Deg C WBT 6400cfm/16TR	2	2	Nos	162457	8000	324914	16000	154900	309800
4	Ceiling Suspended Air Handling Units									

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2. Primary pumps

Sl.No	Description	Supply Qty	Labour Qty	Unit	Supply	Labour	Total Supply	Total Labour	CPWD Justified cost
2	Primary Pumps Supply, installation and testing and commissioning of back pull out, end suction pumps factory mounted on a common base with electric motor. The pump motor shall be suitable for 415+/- 10% volts, 50 cycles, 3 phase AC power supply. The system shall be c								
2.1	Primary Chilled Water Pumps for water cooled centrifugal Chiller (2 Working + 1 standby). Flow rate 70US gpm. head : 36 mt W/G	3	0	Nos	50304	4305	150912	0	50500 151500
	Sub Total						<input type="checkbox"/> 150,912	<input type="checkbox"/> 0	
	VAT @ 12.5% applicable on supply of material						<input type="checkbox"/> 18,864		
	Service Tax @ 10.3% applicable on Erection							<input type="checkbox"/> 0	
	Total						<input type="checkbox"/> 169,776	<input type="checkbox"/> 0	151500

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1. Chiller - Bill Of Quantities

Created

CPWD justified cost

Sl.No	DESCRIPTION	Supply	Labour	UNITS	Supply	Labour	Total Supply	Total Labour		
		QTY	QTY		Rate	Rate				
1	Supply, Installation, Testing and Commissioning of Air Cooled chiller with scroll compressor, complete with all auxiliary equipments, controls centre, inter connecting piping, water flow safety trip, electrical power panel, control wiring including insula									
	Chilled Water in 13 ⁰ C									
	Chilled Water out 6 ⁰ C									
	Chilled Water Flow rate 1.9GPM/TR.									
	Evaporator Fouling Factor: 0.0005 FPS									
	Voltage - 380 to 440 V									
	Ambient temperature - 39.44 ⁰ C									
1.1	36TR Capacity	1	0	No	810043	28750	810043	0	1002600	1002600
1.2	24TR Caopacity	2	0	Nos	580531	28750	1161062	0	695700	1391400
1a	Inlet Air humidification Pad with necessary pumps, valves etc. for Chiller air intake	0	0	Set	117000	23400	0	0		
	Sub Total						<input type="checkbox"/> 1,971,105	<input type="checkbox"/> 0		
	Vat Tax @ 12.5%						<input type="checkbox"/> 246,388			
	Service Tax 10.3%							<input type="checkbox"/> 0		
	Total						<input type="checkbox"/> 2,217,493	<input type="checkbox"/> 0		2394000

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Name of work: Koothamabalam - Heating Ventilation and Air conditioning works in Kalakshetra Foundation.

Annexure II - Items executed (along with cost) with cpwd justified cost

Summary

Summary cost

S.NO	DESCRIPTION of items	Total including supply & erection
1	CHILLER	23,94,000.00 ✓
2	PUMP	1,51,500.00 ✓
3	AHU &TFA	28,84,800.00 ✓
4	LOW SIDE	27,81,023.00 ✓
5	HVAC ELECTRICAL PANEL	1,68,000.00 ✓
	Total	83,79,323.00
	Grand total	83,79,323.00

Annexure II - Items executed (along with cost) *Execution*

Summary

S.NO	DESCRIPTION of items	SUPPLY	ERECTION
1	CHILLER	22,17,493.13	0.00
2	PUMP	1,69,776.00 ✓	0.00
3	AHU &TFA	29,27,205.00 ✓	1,43,607.32
4	LOW SIDE	27,75,249.13	3,12,800.13
5	HVAC ELECTRICAL PANEL	2,91,249.00	0.00
	Total	83,80,972.26	4,56,407.44
	Grand total	88,37,379.70	

% increased in plus

4,58,056.70

5.47%

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ELECTRICAL INSTALLATION WORK AT KOOTHAMABALAM -Additional work

CPWD justified cost

ITEM NO	DESCRIPTION	Material supply		Labour Amount		Material supply		Labour Amount		
11.b	8 CORE BALANCED AUDIO CABLE			59	40.00	2,360.00		59	21.00	1,239.00
11.c	6.0 SQMM SPEAKAR CABLE			294	35.00	10,290.00		294	21.00	6,174.00
11.d	1 CORE BALANCED AUDIO CABLE			107	35.00	3,745.00		107	16.00	1,712.00
11.e	4.0 SQMM SPEAKAR CABLE (NYFAZ)			646.5	35.00	22,627.50		646.5	16.00	10,344.00
	Total			4,42,840.00		2,27,702.50		4,66,351.00		93,168.50
	say					2,27,703.00				
	Grand total (Material + Labour)			4,42,840.00		2,27,703.00		4,66,351.00		93,168.50
	Discount On 3%			13,285.00		6,831.00		13,991.00		2,795.00
	Sub Total			4,29,555.00		2,20,872.00		4,52,360.00		90,373.50
	Add S.T 10.3% On Erection					22,750.00				9,308.00
				4,29,555.00		2,43,622.00		4,52,360.00		99,681.50
	Total			<u>4,29,555.00</u>		<u>6,73,177.00</u>		<u>4,52,360.00</u>		<u>5,52,041.50</u>
	difference in amount and %							<u>1,21,135.50</u>		<u>21.94%</u>

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ADDITIONAL WORK COMPARISON - ELGETRIER

(24)

ELECTRICAL INSTALLATION WORK AT KOOTHAMABALAM - Additional work

CPWD justified cost

ITEM NO	DESCRIPTION	Material supply			Labour Amount			Material supply			Labour Amount		
		Qty	Rate	Total	Qty	Rate	Total	Qty	Rate	Total	Qty	Rate	Total
1	FOOT LAMP BOX	9.00	570.00	5,130.00	9	150.00	1,350.00	9.00	247.00	2,223.00			
2	CEILING FAN BOX	58.00	170.00	9,860.00	58	75.00	4,350.00	58.00	215.00	12,470.00			
3	FLOOR MOUNTED BOX (250X250X200MM)	20.00	4,100.00	82,000.00	20	650.00	13,000.00	20.00	3,276.00	65,520.00			
4	WALL MOUNTED BOX (450X300X150)	8.00	2,500.00	20,000.00	4	550.00	2,200.00	8.00	1,926.00	15,408.00			
5	3R X 1.5 SQMM CU WIRE	2,000.00	85.00	1,70,000.00	1539	30.00	46,170.00	2,000.00	104.00	2,08,000.00			
6	3C X 2.5 SQMM CU WIRE	900.00	85.00	76,500.00	185	15.00	2,775.00	900.00	100.00	90,000.00			
7.a	100X 45MM CABLE TRAY				63	300.00	18,900.00				63	244.00	15,372.00
7.b	150X45MM CABLE TRAY				47	330.00	15,510.00				47	284.00	13,348.00
7.c	200 x 45MM CABLE TRAY				65	390.00	25,350.00				65	316.00	20,540.00
8.a	ONE LIGHT CONTROL BY ONE SWITCH	40.00	925.00	37,000.00	10	120.00	1,200.00	40.00	678.00	27,120.00			
8.b	ADDITIONAL LIGHT POINT	65.00	490.00	31,850.00	40	90.00	3,600.00	65.00	494.00	32,110.00			
9	250X 75MM DIA CORE CUTTING				6	937.50	5,625.00				6	500.00	3,000.00
9	650X 50MM DIA CORE CUTTING				11	2,275.00	25,025.00				11	1,002.00	11,022.00
9	250X 50 MM DIA CORE CUTTING				10	875.00	8,750.00				10	501.00	5,010.00
10.a	25MM DIA PVC CONDUIT	300.00	35.00	10,500.00	200	10.00	2,000.00	300.00	45.00	13,500.00			
11.a	12 CORE BALANCED AUDIO CABLE				257.5	50.00	12,875.00				257.5	21.00	5,407.50

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24	08.03.00	SAME AS ITEM 8.01.00 BUT FOR CEILING FAN POINT	Pts	20.00	960.00	19,200.00	20.00	150.00		20.00	1,428.00	28,560.00
25	09.02.00	40 MM EARTH PIPE	Mtr	5.00	12,000.00	60,000.00				5.00	15,161.00	75,805.00
26	09.10.00	1C X 25 SQMM CU WIRE	Mtr	100.00	190.00	19,000.00	96.00	40.00	3,840.00	100.00	253.00	25,300.00
27	10.00.00	CABLE TRAY										
28	10.02.00	300 MM (W) X 50 MM (h) SUPPLY ERECTION	Mtr	25.00	550.00	13,750.00	14.30	100.00	1,430.00	25.00	671.00	16,775.00
29	10.03.00	CONNECTING AND COMMISSIONING OF 6 MM	Mtr	300.00	160.00	48,000.00	100.00	50.00	5,000.00	300.00	268.00	80,400.00
30	11.00.00	GI TRUNKING BOX										
31		100 X 45 MM	Mtr	150.00	350.00	52,500.00	119.20	60.00	7,152.00	150.00	576.00	86,400.00
32		150 X 45 MM	Mtr	150.00	425.00	63,750.00	46.00	75.00	3,450.00	150.00	476.00	71,400.00
33		200 X 45 MM	Mtr	170.00	475.00	80,750.00	97.20	90.00	8,748.00	170.00	600.00	1,02,000.00
34	13.00.00	Empty pvc conduit										
35	13.01.01	25 MM DIA PVC CONDUIT	Mtr	200	30	6,000.00	200	10	2,000.00	200	46	9,200.00
36	13.01.02	32 MM DIA PVC CONDUIT	Mtr	100	40	4,000.00	65	10	650.00	100	63	6,300.00
37	13.01.04	60 MM DIA PVC CONDUIT	Mtr	100.00	75.00	7,500.00	85.00	20.00	1,700.00	100.00	145.00	14,500.00
38	16.00.00	JUNCTION BOXES										
39	16.01.00	supply erection 14 swg thick junction box with cover	sqft	40.00	120.00	4,800.00	25.20	25.00	630.00	40.00	156.00	6,240.00
		Total			A	18,50,350.00		B	77,978.00		A	21,16,706.00
		Sub Total (Material + Labour) C = (A+B)				19,28,328.00						21,16,706.00
		Discount On 3% (Deduction On C) D				-57,850.00						-63,501.00
		Sub Total E = C - D				18,70,478.00						20,53,205.00
		Add S.T 10.3% On Erection on B = F				8,032.00						0.00
		Grand Total = G				18,78,510.00						20,53,205.00
		Difference				1,74,695.00		9.30%				

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12	07.00.00	RAW / UPS POWER WIRING																	
13	07.01.00	SUPPLYING AND LAYING CONNECTING AND COMMISSIONING OF 2 RUN OF 4 CORE WITH 4 BINS OF 2 CORE SUPPLYING AND LAYING	Mtr	1,000.00	75.00	75,000.00	1,500.00	10.00		1,000.00	101.00	1,01,000.00							
14	07.04.00	CONNECTING AND COMMISSIONING OF 2 RUN OF 7 CORE WITH 4 BINS OF 2 CORE SUPPLYING AND LAYING	Mtr	360.00	130.00	46,800.00	450.00	25.00		360.00	139.00	50,040.00							
15	07.07.00	CONNECTING AND COMMISSIONING OF 3 RUN OF 7 CORE SUPPLYING AND LAYING	Mtr	800.00	55.00	44,000.00	341.00	10.00	3,410.00	800.00	80.00	64,000.00							
16	07.08.00	SUPPLYING AND LAYING CONNECTING AND COMMISSIONING OF 3 CORE 2.5 CORE SUPPLYING AND LAYING	Mtr	1,200.00	68.00	81,600.00	1,200.00	10.00	12,000.00	1,200.00	83.00	99,600.00							
17	07.09.00	CONNECTING AND COMMISSIONING OF 3 CORE 4 CORE SUPPLYING AND LAYING	Mtr	2,400.00	85.00	2,04,000.00	1,044.00	12.00	12,528.00	2,400.00	107.00	2,56,800.00							
18	07.13.00	SUPPLYING AND LAYING OF 25 MM DIA PVC CONDUIT	Mtr	300.00	30.00	9,000.00	600.00	10.00		300.00	51.00	15,300.00							
19	07.14.00	32 MM PVC CONDUIT	Mtr	100.00	38.00	3,800.00				100.00	70.00	7,000.00							
20	08.00.00	LIGHT POINT WIRING																	
21	08.01.00	SUPPLY WIRING CONNECTING AND COMMISSIONING THE LIGHT POINT WITH 3 RUN OF 4 CORE WITH 4 BINS OF 2 CORE ONE LIGHT CONTROL WITH	Pts	100.00	550.00	55,000.00	100.00	90.00	9,000.00	100.00	678.00	67,800.00							
22	08.01.01	ONE LIGHT CONTROL WITH	Pts	70.00	420.00	29,400.00	70.00	60.00	4,200.00	70.00	494.00	34,580.00							
23	08.01.02	SAME AS ABOVE ITEM WITH ADDITIONAL LIGHT POINT	Pts																

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Name of the work: Electrical Installation Work at Koothambalam

Annexure II - Item executed (alongwith cost)

Sl NO	ITEM NO	DESCRIPTION	UNIT	FOR MATERIAL SUPPLY			FOR LABOUR CHARGES			FOR MATERIAL SUPPLY		CPWD justified cost
				Qty	Rate	Total	Qty	Rate	Total	Qty	Rate	
1	02.01.00	LT panel - MAIN PANEL 1 Cable Entry : Top/Bottom and EB&DG Incomer and connecting Out going	set	1.00	2,16,000.00	2,16,000.00	1.00	5,000.00		1.00	1,97,659.00	1,97,659.00
2	02.02.00	LT panel - MAIN PANEL - 2 Cable Entry : Top/Bottom and EB&DG Incomer and connecting Out going	set	1.00	2,30,000.00	2,30,000.00	1.00	5,000.00		1.00	2,22,345.00	2,22,345.00
3	02.03.00	DG panel - Cable entry: top and bottom, DG incomer 1, DG Incomer 2, Bus coupler and out going	each	1.00	2,65,000.00	2,65,000.00	1.00	5,000.00		1.00	2,12,838.00	2,12,838.00
4	02.04.00	AC Panel (Out door type) - Cable entry bottom, incomer and outgoing	each	1.00	1,38,000.00	1,38,000.00	1.00	4,000.00		1.00	1,77,039.00	1,77,039.00
5	03.00.00	MCB DBs										
6	03.01.00	LDB - 8 WAY TPN MCB DB	set	2.00	8,000.00	16,000.00	2.00	560.00	1,120.00	2.00	8,514.00	17,028.00
7	03.03.00	PDB - 8 WAY TPN MCB DB	set	2.00	8,000.00	16,000.00	2.00	560.00	1,120.00	2.00	8,514.00	17,028.00
8	03.04.00	External LDB - 8 WAY TPN MCB DB	set	1.00	8,000.00	8,000.00	1.00	700.00		1.00	8,267.00	8,267.00
9	03.05.00	AHU VERTICL DB / 8 way TPN Vertical MCB DB	set	1.00	16,500.00	16,500.00	1.00	900.00		1.00	19,866.00	19,866.00
11	03.06.00	UPS MAIN VERTICAL DB	set	2.00	8,500.00	17,000.00	2.00	700.00		2.00	12,818.00	25,636.00

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Name of work: Roof insulation board fixing work

S.No	Description	Quantity	Unit	M/s.Chennai Engineers Chennai 600 099		CPWD Revised Justified rate		
				Rate / unit	Total amount	Rate / unit	Total amount	
1	Supply of Anutone board as specified by the consultant	as specified	arranged by kalakshetra at free cost					
2	Labour for fixing anutone sheet including cutting and placing in position	2550.00	sqm	130.00	3,31,500.00	130.00	3,31,500.00	
3	Removing and refit the existing battens available at site for the roof	10.00	cum	55,000.00	5,50,000.00	11,077.00	1,10,770.00	
4	Providing and fixing C.P.Teakwood over existing battens as per the item No.126 in the main work order	15.00	cum	1,50,000.00	22,50,000.00	1,38,654.00	20,79,810.00	
5	Prepare the surface and apply one coat approved water bound emulsion paint	2550.00	sqm	55.00	1,40,250.00	22.00	56,100.00	
	Total and difference				32,71,750.00		25,78,180.00	
					6,93,570.00	26.90%		

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35	Providing and fixing wall ledge on balcony slabs as per Architect instruction for the size 75mm width.	35.78	RM	627.00	22,434.06	627.00	22,434.06
36	Providing and fixing wall ledge on balcony slabs as per Architect instruction for the size 125mm width.	35.78	RM	793.00	28,373.54	793.00	28,373.54
37	Providing and fixing HILTI BOLT of 16 mm dia x 165 mm for structural work all etc.	121.00	No	379.00	45,859.00	379.00	45,859.00
38	Providing and fixing HILTI BOLT of 12 mm dia x 100 mm for structural work all etc.	506.00	No	75.00	37,950.00	75.00	37,950.00
39	Providing wall panelling(louver) work above the stage opening etc.	12.99	sqm	7,919.00	1,02,867.81	5,517.52	71,672.58
40	Providing teak wood hand railing for stair case etc using (instead of SS screw, ms screw used.	55.12	RM	1,485.00	81,853.20	652.35	35,957.53
41	Providing teak wood plank for the stair case (wooden tread)	11.32	Sqm	5,726.00	64,818.32	4,648.50	52,621.02
					77,60,767.84	8,07,922.86	69,52,844.98
							11.62%

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24	Fabricating 50 x 50 angles with 50 x 6 mm flat for parapert fin concrete at all balcony railings	914.99	Kgs	112.00	1,02,478.88	81.45	74,525.94
25	Providing and fixing GI sheet gutter with multiples all around and fix in position	36.09	RM	1,815.00	65,503.35	737.00	26,598.33
27	Statue pedestal for inside koothambalam area	20.00	No	1,000.00	20,000.00	1,000.00	20,000.00
28	P.C.C. 1:4:8 for Athistanam work	15.45	Cum	4,527.00	69,942.15	3,145.75	48,601.84
28	Brick work in CM 1:6 for athistanam work	46.36	Cum	6,064.00	2,81,127.04	4,182.94	1,93,921.10
28	Cornice work decorative plastering for Athistanam work	2317.80	RM	350.00	8,11,230.00	367.00	8,50,632.60
29	Wooden louver inside auditorium	38.20	sqm	4,679.00	1,78,737.80	3,700.32	1,41,352.22
30	Teak wood cost esclation	40.78	Cum	28,917.00	11,79,177.43	28,917.00	11,79,177.43
31	L band work	102.14	RM	154.00	15,729.56	154.00	15,729.56
32	Providing and fixing 80 x 40 mm thick 2.8 mm tubular section by making pocket for holding and pack with concrete at sill level as directed by Architect	102.14	RM	636.00	64,961.04	636.00	64,961.04
33	Staircase Hand rail- Vertical tubular section 40 x 40 mmx2.8mm thick handrail	80.84	RM	430.00	34,761.20	439.83	35,555.86
33	Staircase Hand rail- Horizontal tubular section 40 x 40 mmx2.8mm thick handrail	195.21	RM	321.00	62,662.41	293.22	57,239.48
34	Providing and fixing 250 mm width and 25 mm thick mm plank over parapert and column cladding including fixing lock joint in wood.	20.00	sqm	6,251.00	1,25,020.00	4,648.50	92,970.00

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17	Providing and fixing 50 x 50 mm spacing of 3 mm weld mesh over angeles.	658.69	Kg	125.00	82,336.25	135.71	89,390.82
18	Prepare surface and apply three coats of enamel paint over one coat of primer	318.14	Sqm	140.00	44,539.60	86.75	27,598.65
19	Providing and laying in position, specified mix of RCC including compaction and curing complete but excluding centering, shuttering and reinforcement 1:1 1/2 : 3 nominal mix (1.5 m below and upt 1.2 m above G.L)	77.46	Cum	5,411.60	4,19,182.54	4,334.35	3,35,738.75
20	Providing and fixing 75 mm 6 guage PVC pipe for temporary re routing water line behind the koothambalam	65.55	RM	255.00	16,715.25	257.32	16,867.33
21	Providing and laying besser block masonry work of size: 400 x 200 x200 and cement mortar 1:4 for gallery step work	73.76	Cum	838.00	61,810.88	864.80	63,787.65
22	Fabricating and bending to form circular cyclinder for jet nozzles for AC work with 3.2 mm MS.Sheet kept in position	42.00	No	2,127.97	89,374.74	2,127.97	89,374.74
23	Wooden louver for bird mesh between the beam gaps and dress gaps with 25 x 50 mm frames and 30 x 20 mm wooden louvers both sides including fixing in position etc	174.37	Sqm	5,586.00	9,74,030.82	5,517.82	9,62,142.27
23	Wooden louver for bird mesh between the beam gaps and dress gaps with 25 x 50 mm frames and 30 x 20 mm wooden louvers single side including fixing in position etc	83.19	Sqm	3,964.00	3,29,765.16	3,207.40	2,66,823.61
23	Wooden louver for bird mesh between the beam gaps and dress gaps with 25 x 50 mm frames and 30 x 20 mm wooden louvers single side including fixing in position etc	22.96	Sqm	3,964.00	91,013.44	3,207.40	73,641.90

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10	Crane hire charges and fabricating angular cage with 75 mm x 75 mm existing 1" pipe	1.00	No	79,678.00	79,678.00	79,678.00	79,678.00	79,678.00
11	Providing scaffolding for AC duct and electrical work.	2261.30	Sqm	70.00	1,58,291.00	142.25	3,21,669.93	
12	Providing and fixing eves board as design as existing flower pattern in 1" thick teak wood plank.	62.58	RM	2,231.00	1,39,615.98	2,442.00	1,52,820.36	
13	Providing and fixing anutone board with silver wood planks all over the shuttering edges including tying with GS wire to embed in the roof concrete.(Anutone Board supplied by client at free of cost)	141.18	Sqm	129.00	18,212.22	151.50	21,388.77	
14	Supply of teak wood for Kalakshetra Foundation carpenter for Kalasam moulding	0.49	Cum	1,26,776.00	62,120.24	1,23,119.00	60,328.31	
15	Providing and fixing re bar grouting to the existing beams and slab with Hilti chemical for green room area. 16 mm dia rod	302.00	No	233.00	70,366.00	93.13	28,125.26	
15	Providing and fixing re bar grouting to the existing beams and slab with Hilti chemical for green room area. 20 mm dia rod	114.00	No	472.00	53,808.00	116.41	13,270.74	
15	Providing and fixing re bar grouting to the existing beams and slab with Hilti chemical for green room area. 12 mm dia rod	595.00	No	149.50	88,952.50	69.85	41,560.75	
15	Providing and fixing re bar grouting to the existing beams and slab with Hilti chemical for green room area. 10 mm dia rod	296.00	No	113.60	33,625.60	58.21	17,230.16	
16	Providing and fixing teak wood cutter in valley area for the roof in 1" plank including nailing all etc	43.92	Sqm	4,652.00	2,04,315.84	3,115.25	1,36,821.78	
17	Fabricating and erecting angular section steel above the state area as per Drawing given by Architect with 75 x 75 x 5 mm and 50 x 50 x 5 mm section	3378.50	Kg	112.00	3,78,392.00	81.45	2,75,178.83	
17	Fabricating and erecting the existing available GI pipe at intermediates of the grid as per drawing.	675.00	Kg	40.00	27,000.00	32.30	21,802.50	



Name of work: Additional work		M/s.Chennai Engineers Chennai 600 099		CPWD Revised Justified rate			
SNo	Description	Quantity	Unit	Rate / unit	Total amount	Rate / unit	Total amount
1	Providing and apply 2 coats of Linseed oil for battens and rafter on the roof area	3041.70	Sqm	110.00	3,34,587.00	40.20	1,22,276.34
2	Removing and handing over the Kalasam (big)	2.00	No	3,000.00	6,000.00	3,000.00	6,000.00
3	Removing and handing over the Kalasam (small)	1.00	No	2,000.00	2,000.00	2,000.00	2,000.00
4	Dismantling and removing statue and handing over to the client	54.00	No	200.00	10,800.00	200.00	10,800.00
5	Dismantling the existing name stone on hanling over to the client	2.00	Nos	500.00	1,000.00	500.00	1,000.00
6	Clearing and carting away the existing debris. 2 unit capacity by volume	114.00	1 Load	1,200.00	1,36,800.00	433.92	49,466.88
6.1	Clearing and carting away the existing debris 1 unit capacity by volume	34.00	1 Load	600.00	20,400.00	433.92	14,753.28
7	Prepare surface and fix 50 mm x 50 mm welded mesh of 2.5 mm thick and blow cm1:3 for 40 mm to 50 mm thick with rough course sand with grouting compound by air compressor and guniting equipent.	247.24	Sqm	1,575.00	3,89,403.00	2,079.07	5,14,029.27
8	Stage work for Kalasam fixing area. - 2 areas	1.00	No	30,250.00	30,250.00	30,250.00	30,250.00
9	Kalasam fixing - 2 Nos.	1.00	No	10,895.00	10,895.00	10,895.00	10,895.00

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As per schedule	SNo	Description	Executed Qty			M/s.CARD rate		CPWD rate *		
			Qty	Unit	Rate/Unit	Amount	Rate/Unit	Amount	Rate / unit	Amount
5	1	Add for dismantling additional depth of : Rectangular manholes, 1200 x 900 mm, for depth 1.000	6.00	m	1,000.00	6,000.00	539.01	3,234.06	636.20	3,817.20
		Difference				1,41,05,756.34				1,05,96,194.43
		CPWD rate * prevailing from December 2009 to December 2010			33.12%		35,09,561.91			

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As per schedule	SNo	Description	Executed Qty			M/s.CARD rate		CPWD rate *		
			Qty	Unit	Rate/Unit	Amount	Rate/Unit	Amount	Rate / unit	Amount
5	1	Add for dismantling additional depth of : Rectangular manholes, 1200 x 900 mm, for depth 1.000	6.00	m	1,000.00	6,000.00	539.01	3,234.06	636.20	3,817.20
141	51	Providing and fixing ceiling tiles / boards in steel / aluminium / wooden frame work, including filling joints with joint fillers, jointing compounds, tapes, papers, painting of edges of tiles/boards, with two coats of primer, necessary screws where required etc., complete (frame work will be paid for separately), of sizes : 12.5 mm thick Plaster of paris (gypsum anhydrous) ceiling tiles.	190.62	Sqm	300.00	57,186.00	634.09	1,20,870.24	498.87	95,094.60
146	52	Providing and laying cement concrete flooring 1:2:4, finished with a floating coat of neat cement including cement slurry, laid in panels, in floors, landing, steps and similar locations, including nosing of steps, etc. where required, complete : 25 mm thick	75.21	Sqm	250.00	18,802.50	216.07	16,250.62	262.45	19,738.86
147	53	Providing and laying cement concrete flooring 1:2:4, finished with a floating coat of neat cement including cement slurry, laid in panels, in floors, landing, steps and similar locations, including nosing of steps, etc. where required, complete : 40 mm thick	322.11	Sqm	350.00	1,12,738.50	287.77	92,693.59	262.45	84,537.77
148	54	CONCRETE FLOORING Providing and laying 40 mm thick red oxide flooring, under layer of 30 mm thick cement concrete 1:2:4 and top layer of 10 mm thick plaster of cement red oxide mix (using 3.5 kg of red oxide of iron per 50 kg of	907.39	Sqm	200.00	1,81,478.00	943.29	8,55,931.91	475.60	4,31,554.68
159	55	Providing three finish coats of synthetic enamel colour paint, applied evenly and finished to approved texture, including, preparation of surface and a coat of primer, complete : Steel surfaces with zinc chromate primer	2,526.08	Sqm	140.00	3,53,651.20	92.78	2,34,369.70	86.75	2,19,137.44
161	56	Providing three finish coats of dry colour distemper to walls and ceilings applied evenly to give a uniform finish including preparation of surfaces, primer coat of whitening, to give an even shade.	1,565.12	Sqm	80.00	1,25,209.60	54.32	85,017.32	71.05	1,11,201.78

91,60,266

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As per schedule	SNo	Description	Executed Qty				M/s.CARD rate		CPWD rate *	
			Qty	Unit	Rate/Unit	Amount	Rate/Unit	Amount	Rate / unit	Amount
5	1	Add for dismantling additional depth of : Rectangular manholes, 1200 x 900 mm, for depth 1.000	6.00	m	1,000.00	6,000.00	539.01	3,234.06	636.20	3,817.20
134	47	Door & Windows wooden frames providing and fabricating and fixing in position selected quality seasoned and chemically treated wood in frames and sub frames of doors, windows, clearstory windows and toher frames, wrought to size and profile with mitred joints, including fixing to supports with threaded expansion bolts/ hold fast or other fixing accessories complete 2nd class CP teak wood	0.87	cum	1,70,000.00	1,47,900.00	1,01,117.99	87,972.65	1,38,654.17	1,20,629.13
136	48	Providing 10 mm thick average plaster to soffits and sides of slabs, beams and other concrete surfaces, etc, in cement mortar 1:4 with fine sand, applied, finished smooth and cured, complete.	286.61	Sqm	265.00	75,951.65	105.83	30,331.94	128.90	36,944.03
137	49	Providing 12 mm thick average cement plaster to walls, columns, piers, etc., applied, finished smooth and cured, complete, with mixes : 1:6 with fine sand	601.94	Sqm	215.00	1,29,417.10	103.65	62,391.08	138.45	83,338.59
138	50	Providing 12 mm thick average cement plaster to walls, columns, piers, etc., applied, finished smooth and cured, complete, with mixes : 1:6 with coarse sand	130.74	Sqm	236.00	30,854.64	110.27	14,416.70	138.45	18,100.95

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As per schedule	SNo	Description	Executed Qty			M/s.CARD rate		CPWD rate *		
			Qty	Unit	Rate/Unit	Amount	Rate/Unit	Amount		
5	1	Add for dismantling additional depth of : Rectangular manholes, 1200 x 900 mm, for depth 1.000	6.00	m	1,000.00	6,000.00	539.01	3,234.06	636.20	3,817.20
129	43	Providing and placing in position over/on vapour barrier and such locations, insulation slab of approved manufacturers, abutting each other closely, including cutting to required sizes/profiles and all incidental work, complete, including applying a bonding base of a coat of blown bitumen @ 1.0 kg/sqm, glass wool/mineral wool/rock wool shall be packed in 100 micron low density polythene film, duly sealed from all sides (frame work shall be paid for separately) : 50 mm thick, fibre-glass (24kg per cum)	114.12	Sqm	500.00	57,060.00	258.65	29,517.14	406.10	46,344.13
131	44	Providing and fixing Mangalore tiles of size 400 x 240 mm, so as to cover an area of 320 x 210 mm, the lap should be not less than 75 mm.	1,016.93	Sqm	910.00	9,25,406.30	522.22	5,31,061.18	525.97	5,34,874.67
132	45	Fixing mangalore tiles of size 400x240mm so as to cover an area of 320x210mm. The lap should be not less than 75mm. Provide for necessary mortar jointing, chasing in walls, tile cutting, tile wastage etc.	995.32	Sqm	350.00	3,48,362.00	425.00	4,23,011.00	525.97	5,23,508.46
133	46	Providing and fixing ridge tile and 3 way connector including necessary jointing	346.11	Rm	225.00	77,874.75	480.00	1,66,132.80	240.53	83,249.84

11,889.77

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As per schedule	SNo	Description	Executed Qty			M/s.CARD rate		CPWD rate *		
			Qty	Unit	Rate/Unit	Amount	Rate / unit	Amount		
5	1	Add for dismantling additional depth of : Rectangular manholes, 1200 x 900 mm, for depth 1.000	6.00	m	1,000.00	6,000.00	539.01	3,234.06	636.20	3,817.20
121	39	Providing, fabricating and erecting MS welded built up sections/ frames and applying a primer coat of zinc chromate on duly prepared surfaces, complete : In stringers, treads, landings, etc. of staircases including chequered plates wherever required, all complete.	11,704.32	Kg	130.00	15,21,561.60	79.58	9,31,429.79	69.45	8,12,865.02
122	40	Refabricating with existing framework with additional rod welded support and spreading GI welded metal mesh over the frames to shape and size and installing the fabricated units in place between RC fins without gaps.	2,760.00	Kg	125.00	3,45,000.00	79.58	2,19,640.80	69.45	1,91,682.00
125	41	Providing and fixing wooden frame with 50 mm x 50 mm battens, fixed at 600 mm centre to centre (both ways). Allow for solignum treatment to the timber framework : 2nd class CP teak Wood	190.62	Sqm	3,500.00	6,67,170.00	878.47	1,67,453.95	3,449.25	6,57,496.04
126	42	Providing, fabricating and fixing in position selected quality seasoned and chemically treated wrought wood work in trusses, rafters, runners, posts, struts, wall plates, etc of size and profile in inclined roofs including ancooring to concrete members with holding down bolts, fixing accessories and all incidental works complete. 2nd class CP teakwood	11.40	cum	1,50,000.00	17,10,450.00	76,772.04	8,75,431.57	1,38,654.17	15,81,073.50

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As per schedule	SNo	Description	Executed Qty			M/s.CARD rate		CPWD rate *		
			Qty	Unit	Rate/Unit	Amount	Rate / unit	Amount		
5	1	Add for dismantling additional depth of : Rectangular manholes, 1200 x 900 mm, for depth 1.000.	6.00	m	1,000.00	6,000.00	539.01	3,234.06	636.20	3,817.20
115	35	Providing brick work with bricks of class 75 in half brick thick walls in any shape and profile including curvilinear, laid in cement mortar 1:4 with coarse sand, joints finished flush/raked to 12 mm depth, cured, including scaffolding and flat reinforcement (25 x 3 mm) at every fourth course and embedding the same in adjoining masonry/columns by drilling holes etc complete : Super structure upto 20.0 m above plinth level.								
116	36	Providing random rubble masonry with hard stone with sides of stones, hammer dressed to achieve minimum thicknesses of joints and laid in cement mortar 1:6 with coarse sand, with joints not more than 15 mm thick, joints finished flush/raked to minimum 10 mm depth including necessary scaffolding, complete. Allow for levelling with cement concrete 1:6:12 with coarse sand at plinth/window sill/ceiling level and the like, in : Foundations and plinths, (1.5 m below and upto 1.2 above GL)	66.98	Sqm	680.00	45,546.40	563.75	37,759.98	544.70	36,484.01
119	37	BUILT UP SECTION Providing, fabricating and erecting bolted structural steel built up sections, trusses and frames and applying a primer coat of zinc chromate on duly prepared surfaces, complete.	36.71	Cum	2,600.00	95,446.00	2,630.08	96,550.24	2,817.50	1,03,430.43
120	38	Built up section painting work enamel paint	8,394.25	Kg	112.00	9,40,156.00	62.56	5,25,144.28	81.45	6,83,711.66
			288.78	Sqm	110.00	31,765.80	60.51	17,474.08	86.75	25,051.67

8,49,677

(S)

115

As per schedule	SNo	Description	Executed Qty			M/s.CARD rate		CPWD rate *		
			Qty	Unit	Rate/Unit	Amount	Rate/Unit	Amount	Rate / unit	Amount
5	1	Add for dismantling additional depth of : Rectangular manholes, 1200 x 900 mm, for depth 1.000	6.00	m	1,000.00	6,000.00	539.01	3,234.06	636.20	3,817.20
109	31	Providing and fixing precast cement concrete in vertical and horizontal fins individually or forming boxes and for louvers and similar, cast, cured, hoisted and fixed in position, setting in cement mortar 1:3 with coarse sand, along with required formwork and finishing smooth and all fixing arrangements complete but excluding the cost of reinforcement. Allow for stacking, curing and handling at all levels above/below GL.	8.13	Cum	10,000.00	81,330.00	5,997.13	48,774.66	5,325.80	43,314.73
110	32	Providing brick work with bricks of class 75, joints finished flush/raked to 12 mm depth, cured including necessary scaffolding complete in cement mortar 1:6 with coarse sand, in : Foundations and plinths (1.5 m below and upto 1.2 m above GL)	188.95	Cum	4,250.00	8,03,037.50	3,263.34	6,16,608.09	3,450.75	6,52,019.21
111	33	Providing brick work with bricks of class 75, joints finished flush/raked to 12 mm depth, cured including necessary scaffolding complete in cement mortar 1:6 with coarse sand, in : Superstructures upto 20.0 m above plinth level.	46.58	Cum	4,400.00	2,04,952.00	3,869.22	1,80,228.27	3,972.75	1,85,050.70
112	34	Providing brick work with bricks of class 75, joints finished flush/raked to 12 mm depth, cured including necessary scaffolding complete in cement mortar 1:6 with coarse sand, in : Basement, under ground water tank and the like, upto 7.0 m below GL.	40.29	Cum	4,250.00	1,71,232.50	3,524.46	1,42,000.49	3,450.75	1,39,030.72

10,19,416

476

As per schedule	SNo	Description	Executed Qty			M/s.CARD rate		CPWD rate *		
			Qty	Unit	Rate/Unit	Amount	Rate/Unit	Amount	Rate / unit	Amount
5	1	Add for dismantling additional depth of: Rectangular manholes, 1200 x 900 mm, for depth	6.00	m	1,000.00	6,000.00	539.01	3,234.06	636.20	3,817.20
101	26	Providing and laying cement concrete with coarse sand and graded stone aggregate, 40 mm nominal size in foundations, footings and under floors including side forms curring etc., complete, of nominal mix : 1:4:8	41.85	Cum	3,500.00	1,46,475.00	3,791.23	1,58,662.98	3,145.75	1,31,649.64
102	27	Providing and laying cement concrete with fine sand and graded stone aggregate, 40 mm nominal size in foundations, footings and under floors including side forms, curring etc., complete, of nominal mix : 1:4:8	10.93	Cum	3,500.00	38,255.00	3,583.61	39,168.86	3,145.75	34,383.05
103	28	Providing and laying cement concrete with fine sand and graded stone aggregate, 40 mm nominal size in foundations, footings and under floors including side forms, curring etc., complete, of nominal mix : 1:3:6	176.88	Cum	3,700.00	6,54,456.00	2,948.73	5,21,571.36	3,401.30	6,01,621.94
104	29	Providing and laying plain cement concrete 1:3:6 with coarse sand, laid to required thickness (not exceeding 50mm) and slopes, in roof screedings, floor screedings and similar locations, laid in panels not exceeding 4 sqm., consolidated, finished fair and cured complete : Floor screedings	115.55	Cum	3,700.00	4,27,535.00	5,548.95	6,41,181.17	3,401.30	3,93,020.22
105	30	Providing and laying in position, specified mix of RCC, including compaction and curing complete but excluding centring, shuttering and reinforcement, 1:2:4 nominal mix : In foundation and plinth (1.5 m below and upto 1.2 m above G.L.)	14.38	Cum	4,500.00	64,710.00	4,837.44	69,562.39	4,190.95	60,265.86

12,20,940

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113

As per schedule	SNo	Description	Executed Qty				M/s.CARD rate		CPWD rate *	
			Qty	Unit	Rate/Unit	Amount	Rate/Unit	Amount	Rate / unit	Amount
5	1	Add for dismantling additional depth of : Rectangular manholes, 1200 x 900 mm, for depth 1.000	6.00	m	1,000.00	6,000.00	539.01	3,234.06	636.20	3,817.20
56	23	Providing and injecting chemical emulsions for pre-construction anti-termite treatment and creating continuous chemical barrier under and all around the column pits, wall trenches, basement excavation, top surfaces of plinth filling, junctions of walls and floors, along the external perimeter of buildings; expansion joints, over the top surface of consolidated earth on which plinth protection is to be laid, surrounding of pipes and conduits etc. complete, in accordance with IS:6313 (Part II). (Plinth area of the building at ground level shall only be measured): Using Chloropyriphos Emulsifiable concentrate 0.2%.								
92	24	Providing and fixing centering and shuttering for concrete work (plain and reinforced) in following locations, including strutting, propping, bracing, bolting tie bolt / spring coil / plastic cone, wedging, casing, striking, removal etc, complete. Allow for forming grooves, drips, throats, chamfers, cut-outs, openings etc. where called for and for dressing with approved shuttering oil to prevent adhesion. The works are at all levels. The floor height is up to 4.00 m : Sides of footings of columns and walls and sides of base slabs.	1,179.52	Sqm	60.00	70,771.20	561.04	6,61,757.90	93.65	1,10,462.05
100	25	Providing and laying in position TMT (Thermo Mechanically Treated) bar reinforcement in all reinforced concrete works including straightening, cutting, bending, binding with 18 gauge annealed steel wire, complete, of grade : Fe 415	433.17	Sqm	300.00	1,29,951.00	129.55	56,117.17	166.05	71,927.88
			9.29	Tonne	55,000.00	5,10,785.00	65,564.31	6,08,895.75	53,850.00	5,00,104.95

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9

As per schedule	SNo	Description	Executed Qty				M/s.CARD rate		CPWD rate *	
			Qty	Unit	Rate/Unit	Amount	Rate/Unit	Amount	Rate / unit	Amount
5	1	Add for dismantling additional depth of : Rectangular manholes, 1200 x 900 mm, for depth 1.000.	6.00	m	1,000.00	6,000.00	539.01	3,234.06	636.20	3,817.20
41	17	Banking / Depositing all types of excavated earth in layers not exceeding 200 mm in thickness, keeping each watered soil in each layer with Filling available excavated earth (excluding rock)	481.73	Cum	140.00	67,442.20	144.36	69,542.54	169.10	81,460.54
44	18	in trenches, plinths, sides of foundations and in adjacent areas to profiles, shapes and levels etc. in layers not exceeding 200 mm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m, complete.	111.07	Cum	120.00	13,328.40	67.88	7,539.43	75.45	8,380.23
45	19	Supplying and stacking good earth, free from organics impurities.	1,194.81	Cum	350.00	4,18,183.50	246.73	2,94,795.47	309.74	3,70,080.45
46	20	Earth work in rough excavation, in all types of soil, banking excavated earth in layers not exceeding 200 mm in thickness, breaking clods, watering, rolling each layer with 1/2 ton roller, or compacting with wooden or steel rammers, and	692.54	Cum	250.00	1,73,135.00	230.04	1,59,311.90	276.50	1,91,487.31
48	21	Add for every additional lift of 1.5 m or part thereof in: All types of	108.13	Cum	35.00	3,784.55	27.99	3,026.56	35.45	3,833.21
52	22	Earth work in excavation, in trenches, in all types of soil, for pipes, cables, etc. including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m including getting out the excavated earth and then returning the soil as required, in layers not exceeding 200 mm in depth including consolidating each deposited layer by ramming, watering etc. and disposing of surplus excavated soil as directed, within a lead of 50 m complete, of pipes, cables of sizes : upto 80 mm dia. (minimum width of trench 450 mm)	65.55	m	150.00	9,832.50	131.14	8,596.23	98.10	6,430.46

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111

As per schedule	SNo	Description	Executed Qty				M/s.CARD rate		CPWD rate *	
			Qty	Unit	Rate/Unit	Amount	Rate/Unit	Amount	Rate / unit	Amount
5	1	Add for dismantling additional depth of : Rectangular manholes, 1200 x 900 mm, for depth upto 1.000 m	6.00	m	1,000.00	6,000.00	539.01	3,234.06	636.20	3,817.20
20	10	Dismantling tile work in floors and roofs in cement mortar/lime mortar including stacking of serviceable material and disposal of unserviceable material upto a lead of 50 m, of thickness : 10 mm to 25 mm	2,285.11	Sqm	225.00	5,14,149.75	51.09	1,16,746.27	22.12	50,546.63
21	11	Dismantling tile work in floors and roofs in cement mortar/lime mortar including stacking of serviceable material and disposal of unserviceable material upto a lead of 50 m, of thickness : over 25 mm and upto 40 mm	2,188.79	Sqm	250.00	5,47,197.50	26.07	57,061.76	35.65	78,030.36
23	12	Dismantling woodwork in frames, trusses, purlins and rafters upto a 10 metres span and 5 metres	55.48	m	800.00	44,384.00	4.23	234.68	1,357.65	75,322.42
26	13	Dismantling CI / GS / PVC / asbestos exposed rain water pipes with fittings and clamps including stacking the serviceable material and disposal of unserviceable material within a 50 m lead, of dia: upto 80 mm	1,080.00	m	20.00	21,600.00	16.68	18,014.40	19.60	21,168.00
31	14	Felling trees including cutting of trunks and branches, removing the roots, stacking of serviceable materials and disposal of unserviceable materials within a 50 m lead, complete, of girths (measured at a height of 1.0 m above G.L.) : over 300 mm and upto 600 mm	10.00	Ea.	500.00	5,000.00	115.89	1,158.90	142.75	1,427.50
32	15	Felling trees including cutting of trunks and branches, removing the roots, stacking of serviceable materials and disposal of unserviceable materials within a 50 m lead, complete, of girths (measured at a height of 1.0 m above G.L.) : over 600 mm and upto 1200 mm	32.00	Ea.	1,000.00	32,000.00	526.76	16,856.32	631.80	20,217.60
34	16	Surface dressing of the ground including removing vegetation and inequalities not exceeding 150 mm deep, in all types of soil and disposal of rubbish upto a lead of 50 m, complete.	20.00	100sm	1,100.00	22,000.00	747.66	14,953.20	894.20	17,884.00

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CWIL

As per schedule	SNo	Description	Executed Qty			M/s.CARD rate		CPWD rate *		
			Qty	Unit	Rate/Unit	Amount	Rate / unit	Amount		
5	1	Add for dismantling additional depth of : Rectangular manholes, 1200 x 900 mm, for depth 1.000.	6.00	m	1,000.00	6,000.00	539.01	3,234.06	636.20	3,817.20
9	2	Dismantling of fence including supports of MS sections, pipe, wooden or any other material or	121.38	Sqm	160.00	19,420.80	29.18	3,541.87	21.05	2,555.05
10	3	Dismantling of fence including supports of MS sections, pipe, wooden or any other material or	156.01	Sqm	450.00	70,204.50	13.83	2,157.62	21.05	3,284.01
11	4	Demolishing lime concrete / cement concrete in all mixes, in foundations, super structure and	227.52	Cum	1,250.00	2,84,400.00	188.43	42,871.59	221.85	50,475.31
12	5	Dismantling / Demolishing brick work in cement / lime mortar in foundations, super structure and basement, at all heights / depths, including removing of mortar, cleaning bricks and stacking of serviceable materials and disposed of unserviceable materials upto 50 m lead								
14	6	Dismantling / Demolishing brick work in cement / lime mortar in foundations, super structure and basement, at all heights / depths, including removing of mortar, cleaning bricks and stacking of serviceable materials and disposed of unserviceable materials upto 50 m lead	79.15	Cum	2,500.00	1,97,875.00	772.57	61,148.92	960.80	76,047.32
17	7	Taking out door, window and clerestory window shutters (metal or wood) including chowkhats, architrave, holdfast, etc. complete and stacking within a 50 m lead, of areas: upto 3 sqm	185.19	Cum	1,200.00	2,22,230.40	858.43	1,58,974.37	536.60	99,374.03
18	8	Taking out door, window and clerestory window shutters (metal or wood) including chowkhats, architrave, holdfast, etc. complete and stacking within a 50 m lead, of areas: over 3 sqm	34.00	E.a.	750.00	25,500.00	85.83	2,918.22	42.95	1,460.30
19	9	Dismantling expanded metal or IRC fabrics along with battens and beadings including stacking the serviceable materials within a 50 m lead.	8.00	E.a.	1,000.00	8,000.00	117.03	936.24	56.95	455.60
			454.00	Sqm	215.00	97,610.00	16.89	7,668.06	21.05	9,556.70

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Annexure (I)

Work	Executed Value of Contract	Estimated Value of Executed Work as per CPWD	% Variation
Civil	14105756/-	10596194/-	Plus 33.12%
Additional Civil Work	7760768/-	6952845/-	Plus 11.62%
Roof Insulation	3271750/-	2578180/-	Plus 26.90%
Electrical Installation	1878510/-	2053205/-	Minus 8.51%
Additional Electrical work	673177/-	552041/-	Plus 21.94%
HVAC	8837379.90/-	8379323/-	Plus 5.47%
Total	36527341.00	31111788/-	Plus 15.09 %

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Sl.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
a	6 mm. GI Flat laid in open fashion with necessary clamps,screws, interlinks etc for earthing of Chiller Panel / Chillers	75	Mtrs	50	17	3750	1275	23	1725
b	Supplying, laying and connecting of 2Runs of 10SWG Cu wire laid in open Fashion with necessary interlinks etc for earthing of AHU/Fans/Pumps etc	200	Mtrs	132	17	26400	3400	140	28000
	Sub Total					<input type="checkbox"/> 513,062	<input type="checkbox"/> 37,081		
	VAT @ 4% applicable on supply of material					<input type="checkbox"/> 2,922			
	VAT @ 12.5% applicable on supply of material					<input type="checkbox"/> 55,002			19400
	Service Tax @ 10.3% applicable on Erection and difference 10.3 - 12.36%					<input type="checkbox"/> 570,986	<input type="checkbox"/> 3,819	<input type="checkbox"/> 40,900	
	Total					<input checked="" type="checkbox"/> 10,747,655	<input checked="" type="checkbox"/> 1,052,345		
	Total					<input checked="" type="checkbox"/> 11,800,000	<input checked="" type="checkbox"/> 11,800,000		<input checked="" type="checkbox"/> 10,492,252
	Difference in Rs & %					<input checked="" type="checkbox"/> 12.46%		<input type="checkbox"/> 1,307,748	

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Sl.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
a	3.5c x 50Sqmm XLPE AL UG cable(for incomer to Chiller)	25	Mtrs	154	21	3850	525	366	9150
b	3.5c x 35Sqmm XLPE AL UG cable(for incomer to Chiller)	50	Mtrs	119	21	5950	1050	295	14750
c	4C x 16 Sqmm XLPE AL UG Cable (25	Mtrs	79	21	1975	525	192	4800
d	4C X 4Sqmm XLPE Cu Cable (for Pumps & AHU'S)	100	Mtrs	127	21	12700	2100	125	12500
e	4C x 2.5 Sqmm XLPE Cu UG Cable (for Water Circulation Pumps)	50	Mtrs	94	21	4700	1050	120	6000
6	TERMINATION								0
	Supplying, terminating, connecting & commissioning the above underground cables with double compression type glands with all sockets etc complete								
a	3.5c x 50Sqmm XLPE AL UG cable	2	Nos.	385	92	770	184	342	684
b	3.5c x 35Sqmm XLPE AL UG cable	4	Nos.	308	69	1232	276	270	1080
c	4C x 16 Sqmm XLPE AL UG Cable	4	Nos.	231	46	924	184	245	980
d	4C X 4Sqmm XLPE Cu Cable	10	Nos.	182	21	1820	210	180	1800
e	4C x 2.5 Sqmm XLPE Cu UG Cable	4	Nos.	182	18	728	72	180	720
7	CABLE TRAY								
	Supply, fabricating erecting testing and commissioning of ladder type cable tray with box channels for supporting cable tray and with all standard accessories etc., complete								
i	150 x 50 x 1.6mm Ladder Type Cable Tray	30	Mtrs	275	86	8250	2580	300	9000
	Cable tray rate inclusive of all supports , earth flat-complete								
	Note :								
8	EARTHING								

Sl.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
	NOTE:								
	01.The withstanding capacity mentioned is Ics only adjustable overload and fixed short								
	BUSBAR : ALUMINIUM								
	RATING : 125 AMPS								
	The Phase Bus bar shall be 1R x 40 x 6mm. and the								
	Neutral bar shall be 40 x 3 mm.								
	The Earth Bus bar shall be 2 Runs of 25 x 3 mm.	1	Set	73500	5500	73500	5500	75000	75000
2	ISOLATORS								
	Supply installation testing and commissioning of Isolator for Chiller with all standard accessories complete								
i	125Amps for Chiller	1	Set	7875	550	7875	550	7500	7500
ii	100Amps for Chiller	2	Set	7875	550	15750	1100	7750	15500
3	DRIVE								
	Supply installation testing and commissioning of Variable Frequency Drive for following capacity with all standard accessories complete								
a	VFD Suitable for 4.0kW AHU	2	Set	53088	2200	106176	4400	36000	72000
b	VFD Suitable for 3.0kW Pumps	3	Set	50904	2200	152712	6600	32000	96000
5	CABLES								
	commissioning the following 1.1KV Grade AYYF/YFY/YWY Under Ground cables with necessary clamps screws etc. and the cables shall be laid in trench/clamped along wall/column/laid in cable tray etc(the rates inclusive of suitable clamps,								

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SLNo	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
	commissioning of MV cubicle type suitable for 415V, 3-phase, 4 wire system, compatible to BMS totally enclosed floor mounted type, dust, damp and vermin proof main distribution board made out of 14								
	Incoming								
	1)125Amps TPN MCCB 36kA, with adjustable Overload and fixed short circuit relays, earth fault relay etc ----- 1 Set								
	Outgoing								
	1)63A TPN MCCB 16KA(1cs) Capacity -----1 Set Short circuit relays (Incoming to Three Stage Ambiator Supply fans) with star delta starter, Push button suitable for 15kW 1No								
	2)20A TPN MPCB 16KA(1cs) Capacity -----2 Sets Short circuit relays (Incoming to Three Stage Ambiator Scavenger Fan) with DOL Starter & Push button								
	3)20A TPN MPCB 16KA(1cs) Capacity -----2 Sets With Adjustable Overload and fixed Short circuit relays (Incoming to 6400CFM AHU)								
	4) 63 A TPN MCCB 16KA(1cs) Capacity -----2Sets for Spare								

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Sl.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
	3)16 A TPN MPCB 16KA(1cs) Capacity -----3Sets With Adjustable Overload and fixed Short circuit relays (Incoming to								
	4)10 A TPN MPCB 16KA(1cs) Capacity -----2Sets With Adjustable Overload and fixed Short circuit relays (Incoming to Water Circulation Pumps) with DOL Starter & Push button								
	5)63 A TPN MCCB 16KA(1cs) Capacity -----2Sets for Spare With Adjustable Overload and fixed Short circuit relays								
	NOTE: 01.The withstanding capacity mentioned is Ics only adjustable overload and fixed short circuit relays BUSBAR : ALUMINIUM RATING : 250 AMPS The Phase Bus bar shall be 1R x 40 x 10mm. and the Neutral bar shall be 40 x 6 mm. The Earth Bus bar shall be 2 Runs of 25 x 6 mm.	1	Set	84000	5500	84000	5500	85000	85000
2	AHU PANEL								

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Sl.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
				Rate	Rate				
	Supply, installation, testing and commissioning of MV cubicle type suitable for 415V, 3-phase, 4 wire system, compatible to BMS totally enclosed floor mounted type, dust, damp and vermin proof main distribution board made out of 14 SWG MS sheet complete with bus bars, MV danger notice plate, protection relays, digital multifunction meter with RS 485 port, indicating lamps, CTs interconnections with suitable capacity / solid aluminium strips, connection of incoming and outgoing cables with thimbles,								
	Incoming								
	1) 250Amps TPN MCCB 36kA, with adjustable Overload and fixed short circuit relays, earth fault relay etc -----1 Set								
	Outgoing								
	1)125A TPN MCCB 25KA(Ics) Capacity -----1 Set								
	With Adjustable Overload and fixed Short circuit relays (Incoming to 36TR Air Cooled Scroll Chiller)								
	2)100A TPN MCCB 25KA(Ics) Capacity -----2 Sets								
	With Adjustable Overload and fixed Short circuit relays (Incoming to 24TR Air Cooled Scroll Chiller)								

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Sl.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
55	Thermal Insulation (Ducting) using 9 mm Thk class o , Nitrile rubber material, joints sealed with adhesive	70	Sq.m	180	99	12600	6930	200	14000
56	13 mm Thk class o , Nitrile rubber material, joints sealed with adhesive tape.	350	Sq.m	259	99	90650	34650	250	87500
57	Thermal Insulation (Ducting) using 16 mm Thk class o , Nitrile rubber material, joints sealed with adhesive	120	Sq.m	319	121	38280	14520	320	38400
58	Acoustic Insulation using / Armasound with 15 mm thick with	1050	Sq.m	1034	121	1085700	127050	1034	1085700
59	HVLS Fan (High Volume Low Speed fan)	1	No	304274.3	6000	304274.3	6000	300000	300000
	Sub Total					<input type="checkbox"/> 3,991,552	<input type="checkbox"/> 615,866		
	VAT @ 4 % applicable on supply of material					<input type="checkbox"/> 76,244			
	VAT @ 12.5% applicable on supply of material					<input type="checkbox"/> 260,681			
	Service Tax @ 10.3% applicable on Erection						<input type="checkbox"/> 63,434		
	Total					<input type="checkbox"/> 4,328,478	<input type="checkbox"/> 679,300		
5. HVAC ELECTRICAL PANEL									
1	CHILLER PANEL	QTY	UNIT	Supply	Labour	Total Supply	Total Labour		

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SL.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
	not less than 20G in thickness. Casings shall be tested to 150mmwg and shall show no leakage or distortion in this condition.								
	Sound absorbing material shall be high density fibre glass held in place with at least 5% compression to prevent voids due to settling. Absorption material density shall be minimum 48 kg/cum. Fibreglass faced with minimum 26 g perforated galvanised sheet metal of minimum 40% open area. Combustion ratings shall be as								
	COMPUTER SELECTION SHOULD BE ATTACHED								
53.01	Supply and installation of supply air silencer measurement as per ((W+H)2L)	70	Sq.m	2415	523	169050	36610	2415	169050
53.02	Supply and installation of return air silencer measurement as per ((W+H)2L)	20	Sqmt	2415	523	48300	10460	2415	48300
53.03	Supply and installation of Fresh air Silencer as per ((W+H)2L)	20	Sqmt	2415	523	48300	10460	2415	48300
54	54 mm Thk class o , Nitrile rubber material, joints sealed with adhesive tape.	500	Sq.m	120	99	60000	49500	180	90000

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Sl.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
48	Supply and Fixing - Volume Control Dampers - G. I. Painted	9	Sq.m	3454	560	31086	5040	4500	40500
49	Supply and Fixing - Collar Damper - M.S. Powder Coated	2	Sq.m	1439	560	2878	1120	1500	3000
50	Supply and Fixing - Motorized Fire Dampers	0	Sq.m	6133	625	0	0	0	0
51	Supply and Fixing - actuators with Control Panel for above fire dampers, complete with all accessories like Actuator, control panel etc and any necessary requirement which can perform the controlling the Damper. It shall be integrated with VFD &	0	Nos	7200	375	0	0	0	0
52	Supply and fixing of canvass connection	6	Sq.m	2568	392	15408	2352	2500	15000
53	Attenuators								
	Sound Attenuators for Supply, Return air Duct & Fresh air duct								
	Sound Attenuators of Dissipative type to be provided on the supply air duct entering the AHU.								
	Sound Attenuators shall consist of outer casing with 22G GI Sheets, sound absorbing material and internal baffles, splitters and supports as expalined in the technical specifications.								

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Sl.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
23.02	20 Gauge	40	Sq.m	583	168	23320	6720	1004	40160
23.03	22 Gauge	850	Sq.m	540	112	459000	95200	890	756500
23.04	24 gauge	60	Sq.m	391	112	23460	6720	725	43500
19	Supply and Install GI Round duct for the following sizes								
	630mm Dia	15	RMft	1539	399	23085	5985	1060	15900
	560mm Dia	15	RMft	1367	355	20505	5325	850	12750
	450mm Dia	15	RMft	1098	286	16470	4290	310	4650
	310mm Dia	15	RMft	757	196	11355	2940	600	9000
42	Supply and fixing of Al power coated Continuous linear grill								
	100mm wide	3	RMft	280	56	840	168	404	1212
	150mm wide	3	RMft	419	84	1257	252	606	1818
43	Supply and fixing of Al power coated Swirl Diffuser with VCD along with plenum and necessary connections	4	Nos	2036	202	8144	808	3000	12000
44	Supply and fixing of Al power coated return air Swirl Diffuser without	4	Nos	1501	112	6004	448	2000	8000
45	Supply and fixing of Al power coated linear supply air grill with VCD	10	Sq.m	4233	560	42330	5600	700	7000
46	Supply and fixing of Al power coated linear return air grill without VCD	14	Sq.m	2794	560	39116	7840	400	5600
47	Supply and fixing of Jet Nozzle (650CFM Each)	51	Nos	3745	84	190995	4284	3500	178500

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SL.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
18.02	32 NB								
	25 mm thick EPS insulation	30	Mtrs	363	159	10890	4770	300	9000
18.03	25 NB								
	25 mm thick EPS insulation	40	Mtrs	308	134	12320	5360	300	12000
19	Supply, installation, testing and commissioning of Air Separator with Compression Tank of suitable capacity, made up of Suitable gauge MS sheet insulated with 50mm TF quality HDPE and sand cement plastering complete with pipe connections, gate valves, drain valves, quick fill connections. gauge glass. over	1	set	107321	9520	107321	9520	100000	100000
20	Acoustic insulation for AHU room using / fibre glass with 50 mm thick 24 kg / m ³ with Rigid board covered with RP tissue & 26 g Al perforated sheet	0	Sq.m	480	169	0	0	0	0
21	Fresh Air arrangement (Wall cowl, bird screen with F. A. D.)	3	Sq.m	2878	560	8634	1680	2800	8400
22	Fresh Air Louver	16	Sq.m	4893	560	78288	8960	4500	72000
23	Ducting Ducting – supply and install GI sheet metal duct, supports, adjustable splitter, guide vanes including air balancing with necessary connections etc.,								
23.01	18 Gauge	130	Sq.m	728	168	94640	21840	1257	163410

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97

S/No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
12	Pressure Gauges with 3/8" Syphon and ball Valve	28	Nos.	696	168	19488	4704	750	21000
13	Supply & Installation of Thermo well with stem type thermometer	19	Nos.	749	168	14231	3192	750	14250
14	Supply & Installation of 3/8" Air Purge valves with Ball Valve	15	Nos.	749	224	11235	3360	750	11250
15	Supply , installation , testing and commissioning of Drain valves								
15.01	25 mm dia	13	Nos	872	224	11336	2912	900	11700
16	Supply , installation , testing and commissioning of Ball valve with & without y-strainer								
16.01	25 mm dia	2	Nos	2286	448	4572	896	2500	5000
16.02	32 mm dia	2	Nos	6494	573	12988	1146	6500	13000
17	Bellows								
17.01	50mm dia	14	Nos	4494	448	62916	6272	4000	56000
18	Drain Piping								
	Insulated drain piping GI screwed 25mm from AHU drain pans, chilled water pump glands, to nearest floor drain, complete with U-trap and necessary fittings with 25mm EPS TF and SCP								
18.01	40-NB								
	25 mm thick EPS insulation	40	Mtrs	401	185	16040	7400	350	14000

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Sl.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
9	Supply ,Installation , testing and commissioning of Pressure independent 2-Way Motorised diverting /mixing valve cum balancing valve complete with Transformer, linkage mechanism, modutroimotor , cables, thermostats, insulation , sensor etc.,& as per specification								
9.01	25 mm dia	0	Nos	41194	250	0	0	0	0
9.02	32 mm dia	1	Nos	36758	287	36758	287	36000	36000
9.03	40 mm dia	3	Nos	55587	358	166761	1074	55000	165000
9.04	50 mm dia	0	Nos	65360	500	0	0	0	0
10	Supply , installation , testing and commissioning of insulated y type with fabricated steel body strainer complete with flanges, bolts, nuts , gaskets etc., with mesh less than 20, 1.6mm thick screen , CI 210 FG 260 body, with PN 1.0 rating ,SS304 filter /w								
10.01	50 mm dia	3	Nos	2653	448	7959	1344	3446	10338
11	Supply , installation , testing and commissioning of insulated Non Return Valve complete with flanges , bolts , nuts , gaskets etc., with 1.0 rating /relevant code / equiv . Swing check type , IS 210 Gr FG-260 body ,IS 210 Gr FG 260 Disc,13% Cr SS								
11.01	50 mm dia	3	Nos	2483	448	7449	1344	2360	7080

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Sl.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
7	Supply and installation of the following Pre Insulated MS pipes to IS:3589 with puff insulation covering with HDPE and specified wall thickness of 8mm , cut to required lengths and installed with all welded joints, the necessary fittings like flanges,elbows, tees, reducers, etc complete with PCC block supports, thrust blocks at every change in level or direction.	0	Mtrs	587	75	0	0	0	0
7.01	25 mm dia	25	Mtrs	600	89	15000	2225	666	16650
7.02	32 mm dia	90	Mtrs	719	110	64710	9900	843	75870
7.03	40 mm dia	130	Mtrs	925	138	120250	17940	1034	134420
7.04	50 mm dia	70	Mtrs	1132	179	79240	12530	1201	84070
7.05	65 mm dia	110	Mtrs	1405	221	154550	24310	1458	160380
7.06	80 mm dia								
8	Supply , installation , testing and commissioning of insulated cast iron Butterfly Isolation Valves with Insulation complete with gaskets , flangers etc.,PN 16 class rating IS 210 Grfg 260body, Ductile iron ASTM A 536 Gr 65-45-12 Disc, EPDM / Buna -	0	Nos	2496	250	0	0	0	0
8.01	25 mm dia	4	Nos	3553	287	14212	1148	2500	10000
8.02	32 mm dia	8	Nos	3684	358	29472	2864	2629	21032
8.03	40 mm dia	17	Nos	3405	448	57885	7616	3269	55573
8.04	50 mm dia	0	Nos	4428	650	0	0	0	0
8.05	65 mm dia	0	Nos	5108	800	0	0	0	0
8.06	80 mm dia								

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SL.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
6	Supply & Installation of factory made Split Type Air conditioner units complete with centrifugal blower cooling coil etc., enclosed the insulation along with matching air cooled condenser with Rotary compressor all in with microprocessor control & Remote Control including gas charging, Supports for outdoor units, Safety controls, Power cabling and refrigerant piping between indoor and outdoor units and drain piping, etc. Units are included with all Refrigeration Controls .Refrigerant pipe shall be included with VIDOFLEX Tubular pipe insulation. including Minor civil works required if	4	Nos	29993	2300	119972	9200	32000	128000
6.1	1.5TR								
	Sub Total					<input type="checkbox"/> 2,959,376	<input type="checkbox"/> 178,563		
	VAT @ 12.5% applicable on supply of material					<input type="checkbox"/> 369,922			
	Service Tax @ 10.3% applicable on Erection						<input type="checkbox"/> 18,392		
	Total					<input type="checkbox"/> 3,329,298	<input type="checkbox"/> 196,955		
4. LOW SIDE									
SL. No.	Description	Qty	Unit	Supply Rate	Labour Rate	Total Supply	Total Labour		

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Sl.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
4	Ceiling Suspended Air Handling Units Supply and installation of Double skin Ceiling suspended AHU's for the following Specifications and Capacities, including, Fan Motors, Pre Filters, 6 Row Deep Coils with Supports etc. (Flow rate for AHU is 1.9 GPM per TR).								
I	Ground Floor								
4.10	15TR / 3400CFM / 40 mm TSP / 6 Row	1	Nos	67611	8000	67611	8000	86000	86000
4.20	12TR / 3800CFM / 40 mm TSP / 6 Row	1	Nos	72440	6853	72440	6853	89000	89000
5	Ambiator								
	Supply, Installation & commissioning of Floor mounted Three Stage Ambiator unit as per the tender Specifications and Capacities, including, Supply Fan and Exhaust fan , Motors, Pre Filters, Heat Exchanger, Pumps, Spray arrangement with Supports etc.								
5.1	33000CFM	1	Nos	2374439	138510	2374439	138510	2400000	2400000

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Sl.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
	FAN : Plug type fan Efficiency of fan morethan 75%								
	Fan outlet - below 6m/sec								
	Fan motor should be suitable for variable frequency drive								
	VFD with BMS compatability and additional I/O points								
	Mixing box for return air Insulated with Arma Sound								
	Inbuilt Silencer in the return air side								
	COIL : 6row deep Cooling Coil								
	Gross coil velocity - below 420fpm								
	20micron Pre filter								
	Canvass Connection with mouth								
	SS Drain Tray								
	Inspection glass								
	Fan Safety Switch at the door								
	Service light								
	PF contact at the incommor of the panel for BMS ON / OFF status and Common thermostat to be considered								
	Remote Wiring for operating the								
	Electrical wiring, control wiring, motors & Earthing								
	Including necessary Civil works asper site condition								
	TSP : 50mm of wg								
	LAT = 10.5 Deg C DBT								
	C WBT								
3.1	6400cfm/16TR	2	Nos	162457	8000	324914	16000	154900	309800

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Sl.No	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
2	Primary Pumps Supply, installation and testing and commissioning of back pull out , end suction pumps factory mounted on a common base with electric motor. The pump motor shall be suitable for 415+/- 10% volts, 50 cycles, 3 phase AC power supply. The system shall be complete in all respects and suitable	3	Nos	50304	4305	150912	12915	50500	151500
2.1	Primary Chilled Water Pumps for water cooled centrifugal Chiller (2 Working + 1 standby). Flow rate 70US gpm. head : 36 mt WG								
	Sub Total					<input type="checkbox"/> 150,912	<input type="checkbox"/> 12,915		
	VAT @ 12.5% applicable on supply of material					<input type="checkbox"/> 18,864			
	Service Tax @ 10.3% applicable on Erection						<input type="checkbox"/> 1,330		
	Total					<input type="checkbox"/> 169,776	<input type="checkbox"/> 14,245		
3. AIR Handling Units									
Sl. No.	Description	Qty	Unit	Supply	Labour	Total Supply	Total Labour		
3	Floor Mounted Air Handling Units 1) Supply, installation, testing and commissioning of Double skin floor mounted AHU's for the following Specifications and Capacities, 50mm thick PUF insulation With thermal break								

Name of work: Heating Ventilating and Air conditioning works at Koothambalam

1. Chiller - Bill Of Quantities		awarded value cost				CPWD justified rate			
SLNo	DESCRIPTION	QTY	UNITS	Supply	Labour	Total Supply	Total Labour	Rate	Amount
1	Supply, Installation, Testing and Commissioning of Air Cooled chiller with scroll compressor, complete with all auxiliary equipments, controls centre, inter connecting piping, water flow safety trip, electrical power panel, control wiring including insulation, painting etc. (Flow rate 1.9 Gpm/TR).								
	Chilled Water in 13 ⁰ C								
	Chilled Water out 6 ⁰ C								
	Chilled Water Flow rate 1.9GPM/TR .								
	Evaporator Fouling Factor: 0.0005								
	FPS								
	Voltage - 380 to 440 V								
	Ambient temperature - 39.44 ⁰ C								
1.1	36TR Capacity	1	No	810043	28750	810043	28750	1002600	1002600
1.2	24TR Caopacity	2	Nos	580531	28750	1161062	57500	695000	1390000
1a	necessary pumps, valves etc. for Chiller air intake	1	Set	117000	23400	117000	23400	150000	150000
	Sub Total					<input type="checkbox"/> 2,088,105	<input type="checkbox"/> 109,650		
	Vat Tax @ 12.5%					<input type="checkbox"/> 261,013			
	Service Tax 10.3%							<input type="checkbox"/> 11,294	
	Total					<input type="checkbox"/> 2,349,118	<input type="checkbox"/> 120,944		
2. Primary pumps									
SLNo	Description	Qty	Unit	Supply	Labour	Total Supply	Total Labour		

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Electrical work @ Koothankulam

Awarded cost value 4908773.24

CPWD justified cost value 5976901.00

Difference 10,68,127.76

% decrease 17.87%



(11)

	2 KVAR - 2 Nos				
	1 KVAR - 1 Nos				
	1 No. Class 1.0 96 Sq.mm Digital Power Factor Meter.	2	Sets	81,540	163,080
19.00.00	SAFETY EQUIPMENTS				
19.01.00	Supplying, erecting and connecting a 5 KG FIRE EXTINGUISHER properly fixed on the wall with necessary clamps, screws, bolts and nuts etc. The extinguisher shall be suitable for all types of fires (A, B & C).	5	NOS	3,379 3379	16,895
19.02.00	Supplying, erecting and connecting Treatment Chart in English and Tamil directly fixed on to the wall with necessary screws etc.	4	NOS.	370	1,480
19.03.00	Supplying 440 V Gloves	2	SET	500	1,000
19.04.00	Supplying, and laying 1800 mm. x 1200 mm x 6 mm. thick ISI Marked Rubber mats to be laid in Front of the Panel Boards.	10	NOS.	1,590	15,900
19.05.00	Supplying and fixing 440 V Danger Board.	3	NOS.	161	483
19.06.00	First Aid Box	2	SET	545	1,090
20.00.00	MISCELLANEOUS				
20.01.00	Providing Temporary lighting at site complete with wiring 20 Nos. of 1 x 40 W tube light fitting.	1	LS	2,619 2500	2,619 2500
20.02.00	Liasion with Electricity Board to avail 1 CT Meter Board connections including submission of Application Forms and other associated works.	1	LS	125,000	125,000
20.03.00	Liasion with Electricity Board for enhancement of 1 no 100 Amps energy meter to CT Meter Board connections including submission of Application Forms and other associated works.	1	LS	25,000	25,000
20.04.00	Shifiting of pillar box with cable routing with EB person and related to necessary accessories etc. approximate shifted distance is 25 mtr.	1	LS	6,584 3510	6,584 3510
20.05.00	LT cable route maker	20	Sets	346 338	6,920 6760
20.06.00	Supplying, erecting, connecting & commissioning WEATHER PROOF HENSEL MAKE JUNCTION BOXES with 6 - 20 Amps SP c curve MCB and supports, Connector and necessary accessories.	15	Sets	1,510 1503	22,650 22545
20.07.00	Preparation of "As Built Drawings"	1	LS	10,000	10,000
				59,76,901	61,17,183
	Rupees Sixty One Lakh Seventeen Thousand One Hundred Eighty Three Only				

[Signature]
Junior Engineer (E)
 CCESD-1/II, CPWD, Chennai-90

[Signature]
Assistant Engineer (E)
 CCESD-1/II, CPWD, Chennai-90

59,76,901/
 50,60,591/
 50,60,591/ 1533% below of TC
 59,76,901/
 5
 87

14.04.00	Fixing,connecting and commissioning of 2 x18 W PL SPOT LIGHT FITTING RECESSED DOWN LIGHTER,of PHILIPS MAKE FBS/145/218L with Horizontal lamp position (or) equivalent	50	Nos	84 84	4,200 ✓
14.05.00	Fixing,connecting and commissioning of 1x 40W PATTI TYPE FITTING PHILIPS MAKE TMC55/136HF fixing in the ceiling with all necessary accessories.	50	Nos	33	1,650 ✓
14.06.00	Fixing,connecting and commissioning of 2 x36 W CFL RECESSED PHILIPS MAKE FBS470/236 AGHFPS P5 236 (or) equivalent with Electronic Ballast complete fixing in the false ceiling with all necessary accessories.	30	Nos	156 156	4,680 ✓
15.00.00	LIGHT FIXTURES (EXTERNAL)				
	Note : Only Light Fitting and Lamp will be supplied by Client. All other accessories like clamps, screws etc., shall be included in the erection rates.				
15.01.00	Fixing, connecting and commissioning of BOLLARD LIGHT FITTING OF PHILIPS MAKE CAT # HS 360 1x PL C 18 FOR shall be mounted on already constructed pedestal with necessary Weather Proof Junctionboxes,interconnections between the Junction box and the fitting shall be done with 3 Runs of 2.5 Sq.mm. PVC Insulated copper conductor wires in 2 mm. thick PVC conduits concealed in gate pillar with necessary clamps, screws etc. The Junction box shall be made out of 2 mm. thick M.S. Sheet painted with two coats of red oxide primer, 2 A rewirable Fuse units, 1 No. 5 A One way Switch loop in loop out arrangements concealed in the wall of gate pillar.	30	NOS.	1,133 1,118	33,990 33,540 ✓
15.02.00	Fixing, connecting and commissioning Bulk Head Light fittings to be fixed on the Compound Wall with necessary accessories required for the job.	10	Nos	55 55	550 ✓
16.00.00	JUNCTION BOXES				
16.01.00	Supplying, erecting 14 G thick Junction boxes with cover of 40 mm. height of suitable sizes as per Site conditions. The Junction boxes shall be fixed flush with the floor (powder coated)	500	SQ.FT	159 120	79,500 78,000 ✓
17.00.00	ADVANCED TYPE LIGHTNING PROTECTION				
17.01.00	Supplying, erecting, connecting and commissioning the Dynosphere (CSE TYPE) with necessary foundation plate, mounting screws / bolts, and other associated accessories to complete the system to function.	1	Set	98,578 283 98,032	98,578 98,032 ✓
17.02.00	Supplying, laying, connecting and commissioning 75 KV 36 mm dia special copper cable(only meant for these applications) in G I pipe for protection of the cable with necessary accessories as required .	140	Mtrs	709 654	99,260 97,160 ✓
17.03.00	Supplying, providing and connecting Eath Gel in the Earth Electrode with necessary accessories. As required by the system	3	Sets	15,565 15,836	46,695 ✓
17.04.00	Supplying, erecting, connecting and commissioning a Lightning Event Counter of digital type in weather proof enclosure with necessary accessories.,	1	Set	21,741 21,742	21,741 ✓
17.05.00	Tesing and commissioning of the System (Lumpsum)	1	Set	5,668	5,668 ✓
18.00.00	AUTO POWER FACTOR CAPACITOR BANK			15,410	
	Supplying, erecting and commissioning of 60 KVAR APFC in the enclosed MS Enclosure with all interconnections of Capacitor Bank for 12 Step Relay APFC shall be incorporated to maintain power factor suitable to accommodate the following capacitor bank with all interconnections				
	10 KVAR - 3 Nos				
	5 KVAR - 3 Nos				
	3 KVAR - 3 Nos				

56,27,653
55, 61,436 ✓

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(9)

10.02.00	Supplying, fabricating, erecting, connecting & commissioning of the Perforated type GI Cable Trays with necessary Angle irons for cable supports and other allied fabrication works. Fixing to concrete surfaces shall be done with the help of expandable type anchor fasteners capable of bearing a weight of 500 Kgs. Fixing to brick walls shall be done with grouting. The distance between two supports shall be 2000mm. Thematerials and labour for grouting, cable supportsand Provision for fixing allied fabrication work shall supplied by the contractor with provision for fixing Gi flats Throughout with connection point once every Mtrs on both sides all supports shall be with threaded rods once every 1500mm.				
	600 mm (w) x 50 mm (H)	75	Mtrs	934	70,050
	450 mm (w) x 50 mm (H)	75	Mtrs	777	58,275
	300 mm (w) x 50 mm (H)	100	Mtrs	671	67,100
10.03.00	Supplying,erecting,connecting & commissioning of the 6 mm thread rod with slotted channel supports and welded in the stress supports for the GI trunking and related to all accessories etc.	300	Mtrs	276	82,800
11.00.00	GI TRUNKING				
	Supplying, fabricating, laying and connecting the following GI TRUNKING with cover of 1.6 mm. Thick embedded in the floor (or) open in ceiling / laid in below false flooring with thread rod and rail supports including of L shape,T shape and necessary support,clamps screws and all accessories etc.				
	100 x 45 mm	200	MTS	376	76,000
	150 x 45 mm	100	MTS	480	48,000
	200 x 45 mm.	50	MTS	604	30,200
12.00.00	ERECTING OF SPEAKER EQUIPMENT.				
12.01.00	Erecting of wall mounted speaker with anchor fasterner for 10 kgs weight with supports and clamp will be supplied by cilent	100	Nos	155	15,500
12.02.00	Erecting of ceiling hung speaker with rope support upto 50 kgs weight for sub hopper with supports and clamp will be supplied by cilent	4	Set	895	3,580
12.03.00	Laying of 2 core speaker cable in trunking and conduit etc.	500	Mts	11	5,500
12.04.00	Laying of 20 core speaker cable in trunking and conduit etc.	500	Mts	16	8,000
12.05.00	Laying of 4 core speaker cable in trunking and conduit etc.	500	Mts	11	5,500
12.06.00	Erecting, flush mounted output and input module box in the wall and proper civil finishing box will be supplied by cilent	20	Nos	150	3,000
12.07.00	Erecting, flush mounted of connector terminal and make suitable for 4module powder coated ms base box for the terminal.plate and terminal will be supplied by cilent	20	Nos	133	2,660
13.00.00	EMPTY PVC CONDUITS				
13.01.00	Supplying, laying of Heavy duty PVC conduit laid in floor / concealed in wall / partitions with accessories, necessary clamps, screws etc.				
13.01.01	25 mm. dia PVC Conduits	200	Mts	46	9,200
13.01.02	32 mm. dia PVC Conduits	300	Mts	63	18,900
13.01.03	40 mm. dia PVC Conduits	50	Mts	131	6,550
13.01.04	60 mm. dia PVC Conduits	100	Mts	155	15,500
14.00.00	FIXING OF LIGHT FITTINGS (INTERNAL - COMMON AREA)				
14.01.00	Fixing, connecting and commissioning Ceiling light / chandilier / wall light Fitting with necessary accessories required for the job.	100	Nos	55	5,500
14.02.00	Supplying, fixing of Ceiling fan with necessary down rods,clamps, screws etc.	20	Nos	1,793	35,860
14.03.00	Supplying, fixing of Exhaust fan with louvres, brackets and necessary clamps, screws etc.	10	Nos	1,329	13,290

51 692 20

1232
1323
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09.02.00	Supplying, installing and connecting a Copper plate of size 600mm.x 600 mm.x 3 mm. at a depth of 3000 mm. in an earth pit of 700 x 700 x 3500 mm. filled with salt and charcoal mixed with sand in alternate layers 150 mm. each upto a height of 3000 mm. from bottom. Two copper flats of 25 x 6mm. shall be braced to this copper plate throughout the overlapping length with the copper plate and brought to the surface of the earthpit. This copper flat shall have provision for connecting wires of flats as the case may be. A suitable size of 40 mm. dia GI Pipe shall be provided upto the bottom of the earth pit. This GI Pipe shall have provision for watering through a funnel. A masonry structure shall be constructed to a depth of 450mm. and a heavy duty CI Cover shall be used to cover the pit. The cost of digging and back filling shall also be included. Sand, salt and charcoal are in the Contractor's scope.	6	Sets	15,223 15141	91,338 91,338
09.03.00	Supplying, laying and connecting 50x6mm. G.I.Tape wound in half lapped fashion with bituminous tape painted at a depth of 600mm. in ground to interconnect the earth electrodes. The tape shall not come into contact with any unnecessary metal parts (or) cables along with its route.	100	Mtrs	232	23,200
09.04.00	Supplying, laying and connecting 25 x 6mm. G.I Flat laid in open fashion with necessary clamps, screws, interlinks etc. for earthing the Panels / Stabilizer / DG body earthing etc.	300	Mtrs	130	39,000
09.05.00	Supplying, laying and connecting 25 x 6mm. CU Flat laid in open fashion with necessary clamps, screws, interlinks etc. for earthing the Panels / Stabilizer / DG neutral	100	Mtrs	872	87,200
09.06.00	Supplying, laying & connecting 500mm. long 25 x 6 mm.GI flat with SMC Insulator in open fashion with necessary clamps, screws, etc. as earth link	4	Sets	413	1,652
09.07.00	Supplying, laying, connecting and commissioning 8 SWG bare enamelled copper wire enclosed in PVC Conduits with necessary clamps, screws etc. for earthing AC Equipments / motors etc.	150	Mtrs	99	14,850
09.08.00	Supplying, laying & connecting 500mm. long 25x6mm.Copper flat with SMC Insulator in open fashion with necessary clamps, screws, etc. as earth link for UPS	3	Sets	777	2,331
09.09.00	Supplying, laying and connecting 500mm long 12 x 3 mm. Copper flat with SMC Insulator in open fashion with necessary clamps, screws, etc. as earth link for Data Earthing	10	Sets	565	5,650
09.10.00	Supplying, laying and connecting 25 Sq.mm.PVC Insulated copper conductor wires in PVC Conduits laid open fashion with necessary clamps, screws, interlinks etc.	100	Mtrs	253	25,300
10.00.00	CABLE TRAY				
10.01.00	Supplying, fabricating, erecting, connecting & commissioning of the Powder coated Cable Trays with necessary Angle irons for cable supports and other allied fabrication works. Fixing to concrete surfaces shall be done with the help of expandable type anchor fastners capable of bearing a weight of 500 Kgs. Fixing to brick walls shall be done with grouting. The distance between two supports shall be 600mm. The materials and labour for grouting, cable supports and other allied fabrication work shall supplied by the Contractor at no extra cost.	1000	Kgs	109	109,000

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07.12.00	Supplying, fixing, connecting and commissioning of 10- 16 AMPS SPN MENNEKES make 3 pin and type plug and socket in Manufacturer's mounting box fixed flush with the wall. For music equipment.(indian model)	200	Nos.	1,484 1476	296,800 295,200
07.13.00	Supplying and laying of 25mm. Dia Heavy duty PVC Conduits concealed / open in wall / ceiling etc. with necessary clamps, screws etc. with 1 Run of 16 SWG G.I. Fish wire.	600	Mtrs	51 52	30,600
07.14.00	Supplying and laying of 32 mm. Dia Heavy duty PVC Conduits concealed / open in wall / ceiling etc. with necessary clamps, screws etc. with 1 Run of 16 SWG G.I. Fish wire.	1200	Mtrs	65 70	78,000 84,000
08.00.00	LIGHT POINT WIRING				
08.01.00	Supplying, wiring, connecting and commissioning the light points with 3 Runs of 1.5 Sq. mm. PVC insulated multistranded Copper Conductor wires (One each for Phase, Neutral and Earth) in Heavy duty PVC Conduits concealed in wall / ceiling or open above false ceiling with necessary clamps screws etc. including supplying and fixing 6 Amps. Switch in manufacturers mounting box fixed flush with the wall.				
08.01.01	One Light Controlled by one Switch	100	Pts.	678	67,800
08.01.02	Same as above item with additional light point.	70	Pts.	496	34,720
08.02.00	Same as the Item No. 08.01.00 but for 6 Amps. Independant switched socket combined including supplying and fixing 6Amps Switched Socket.	10	Pts.	1,339 1314	13,390 13,140
08.03.00	Same as the Item No. 08.01.00 but for Ceiling Fan points including supplying, and fixing concealed type fan hook box and electronic regulator.	20	Pts.	1,466 1428	29,320 28,560
08.04.00	Same as Item No. 08.01.01 but for TWO WAY LIGHT POINTS with 2Nos. 6 Amps Switches.	10	Pts.	1,267 1244	12,670 12,440
08.05.00	Same as Item No.08.01.00 but for TWO WAY Fan POINTS with 2 Nos. 6 Amps. Switches.	5	Pts.	1,267 1244	6,335 6,220
08.06.00	Same as the Item No. 08.01.00 but for Exhaust Fan points.	10	Pts.	1,130 1106	11,300 11,060
08.07.00	Same as the Item No. 08.01.00 but for Wall Mounted Fan points.	2	Pts.	1,130	2,260
	Note:-				
	The cost of Supplying, Laying and Pulling for Circuit Mains with 3 Runs of 1.5 Sq.mm. PVC Insulated Multistranded Copper condutor wires in PVC Conduits concealed in wall / ceiling or open above false ceiling (The average length shall be 7Mts from switch board to light point and 10 mtr from DB to switch board) shall be included in the Point rate for Light, Fan, Exhaust Fan, 6 Amps Sockets Etc.				
09.00.00	EARTHING				
09.01.00	Supplying, installing and connecting a 2.5Mtr. long 40mm. dia G.I.Pipe with holes drilled diametrically opposite to each other once every 150mm. in an earth pit of 380x380x3500mm. filled with salt and charcoal mixed with sand in alternate layers 150mm.each upto a height of 3000mm. from bottom. The pipe shall have provision for watering through a funnel.It shall also have provision for connecting 50x6mm.G.I. Flat on two sides. A masonry strucutre shall be onstructed to a depth of 450mm. and a Medium duty CI Cover shall be used to cover the pit. The cost of digging and back filling shall also be included. Sand,salt and charcoal are in the Contractor's scope.	8	Sets	4,168 4096	33,344 32,768

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06.03.00	Supplying, laying, connecting & commissioning 4 Runs of 10 Sq.mm. with 2 Runs of 4 Sqmm. PVC Insulated stranded single core copper conductor FRLS wire for continuous earthing in heavy duty PVC Conduits open above false ceiling or concealed in wall / ceiling with necessary lamps, screws etc.	30	Mtrs	592	17,760
06.04.00	Supplying, laying, connecting & commissioning 4 Runs of 6 Sq.mm. with 2 Runs of 2.5 Sqmm. PVC Insulated stranded single core copper conductor FRLS wire for continuous earthing in heavy duty PVC Conduits open above false ceiling or concealed in wall / ceiling with necessary lamps, screws etc.	30	Mtrs	385	11,550
07.00.00	RAW / UPS POWER WIRING				
07.01.00	Supplying, laying, connecting & commissioning 2 Runs of 4 Sq.mm. with 1 Run of 2.5 Sqmm. PVC Insulated stranded single core copper conductor FRLS wire for continuous earthing in already laid PVC Conduits open above false ceiling or concealed in wall / ceiling with necessary lamps, screws etc from DB to Power Points.	1500	Mts.	101	151,500
07.02.00	Supplying and fixing 6/16Amps Switched Socket in Manufacturer's mounting box fixed flush with the wall.	25	Nos.	531 537	13,425
07.03.00	Supplying, fixing, connecting & commissioning 20Amps Metal clad socket combined with 20Amps DP MCB as control in Manufacturer's mounting box fixed flush with the wall and all necessary accessories etc.	10	Nos.	1,794 1790	17,940 17900
07.04.00	Supplying, laying, connecting & commissioning 2 Runs of 6 Sq.mm. with 1 Run of 2.5 Sqmm. PVC Insulated stranded single core copper conductor FRLS wire for continuous earthing in in PVC Conduits open above false ceiling or concealed in wall / ceiling with necessary lamps, screws etc.	450	Mts.	139	62,550
07.05.00	Supplying, fixing, connecting & commissioning 32 Amps SPN Metal clad socket combined with 32Amps DP as control in Manufacturer's mounting box fixed flush with the wall.	5	Nos.	3205 3,207	16,035
07.06.00	Supplying and fixing 6 Amps Switched Socket in Manufacturer's mounting box fixed flush with the wall.	30	Nos.	411 425	12,330 1521
07.07.00	Supplying, laying, connecting & commissioning 3 Runs of 2.5 Sq.mm. PVC Insulated stranded single core copper conductor FRLS wire for continuous earthing in already laid PVC Conduits open above false ceiling or concealed in wall / ceiling with necessary lamps, screws etc from DB to Power Points.	800	Mts.	80	64,000
07.08.00	Supplying, laying, connecting & commissioning 3 core 2.5 Sq.mm. PVC Insulated flexible copper cable in already laid PVC Conduits (or) open in ceiling or concealed in wall / ceiling with necessary lamps, screws etc from DB to stage focus light point.	1200	Mts.	83	99,600
07.09.00	Supplying, laying, connecting & commissioning 3 core 4 Sq.mm. PVC Insulated flexible copper cable in already laid PVC Conduits (or) GI tray open in ceiling or concealed in wall / ceiling with necessary lamps, screws etc from DB to stage focus light point.	2800	Mts.	107	299,600
07.10.00	Supplying, laying, connecting & commissioning 3 core 6 Sq.mm. PVC Insulated flexible copper cable in already laid PVC Conduits (or) GI tray open in ceiling or concealed in wall / ceiling with necessary lamps, screws etc from DB to stage focus light point.	300	Mts.	204 206	61,800
07.11.00	Supplying, fixing, connecting and commissioning of 16 AMPS SPN MENNEKES make schuko model of 2 pin and type plug and socket in Manufacturer's mounting box fixed flush with the wall. For music equipment. (german make)	40	Nos.	1476 1,484	59,040 59,360

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04.07.00	Supplying, erecting, connecting & commissioning PVC weather proof type enclosure and with 32 AMPS TPN metal clad socket with 4P MCB on an angle Iron frame with necessary interconnections, cable box, brackets, screws, bolts, nuts, etc.	10	Set	4,485 4,403	44,850 44,030
05.00.00	CABLES/TERMINATIONS				
	Supplying, laying, connecting & commissioning the following 1.1 KV Grade AYFY/AYWY (or) YWY /YFY Under ground cables with XLPE Insulation with necessary clamps, screws, etc. in the following methods:-				
05.01.00	BURIED UNDERGROUND / LAID IN TRENCH (Inclusive of digging, back filling, bricks sand etc.)				
	3 1/2 x 240 Sq.mm. Al.	100	Mtrs	1,470	147,000
	3 1/2 x 150 Sq.mm. Al.	400	Mtrs	1,032	412,800
	3C x 2.5 Sq.mm. Cu.	400	Mtrs	329	131,600
	4C x 2.5 Sq.mm. Cu.	250	Mtrs	343	85,750
	4C x 16 Sq.mm. Al.	100	Mtrs	443	44,300
05.02.00	CLAMPED ALONG WALL/CEILING				
	NOTE: Supply of Anchor Fastners and necessary 1.5 mm. thick GI Flat, clamps shall be included in the cost.				
	3 1/2 x 185 Sq.mm. Al.	175	Mtrs	1,019	177,975
	3 1/2 x 150 Sq.mm. Al.	100	Mtrs	845	84,500
	3 1/2 x 50 Sq.mm. Al.	100	Mtrs	368	36,800
	3 1/2 x 35 Sq.mm. Al.	300	Mtrs	297	89,100
	3 1/2 x 25 Sq.mm. Al.	200	Mtrs	230	46,000
	4C x 16 Sq.mm. Al.	400	Mtrs	194	77,600
	4C x 10 Sq.mm. Al.	100	Mtrs	179	17,900
	3C x 2.5 Sq.mm. Cu.	100	Mtrs	122	12,200
05.03.00	TERMINATION				
	Supplying, terminating, connecting and commissioning the above Underground cables with Double compression type glands. The cost of earthing gland with copper strips/ wires shall also be included. The cables shall be terminated with Al / copper lugs after crimping.				
	3 1/2 x 240 Sq.mm. Al.	10	Nos	1,827	18,270
	3 1/2 x 185 Sq.mm. Al.	2	Nos	1,587	3,174
	3 1/2 x 150 Sq.mm. Al.	16	Nos	1,286	20,576
	3 1/2 x 50 Sq.mm. Al.	2	Nos	801	1,602
	3 1/2 x 35 Sq.mm. Al.	10	Nos	666	6,660
	3 1/2 x 25 Sq.mm. Al.	8	Nos	616	4,928
	4C x 16 Sq.mm. Al.	10	Nos	569	5,690
	4C x 10 Sq.mm. Al.	8	Nos	506	4,048
	3C x 2.5 Sq.mm. Cu.	16	Nos	220	3,520
	4C x 2.5 Sq.mm. Cu.	10	Nos	226	2,260
06.00.00	MAINS WIRING				
06.01.00	Supplying, laying, connecting & commissioning 4 Runs of 25 Sq.mm. with 2 Runs of 16 Sqmm. PVC insulated stranded single core copper conductor FRLS wire for continuous earthing in heavy duty PVC Conduits open above false ceiling or concealed in wall / ceiling with necessary lamps, screws etc. for ups input	30	Mtrs	1,365 1,366	40,950 40,980
06.02.00	Supplying, laying, connecting & commissioning 5 Runs of 25 Sq.mm. with 2 Runs of 16 Sqmm. PVC Insulated stranded single core copper conductor FRLS wire for continuous earthing in heavy duty PVC Conduits open above false ceiling or concealed in wall / ceiling with necessary lamps, screws etc. for ups DB.	125	Mtrs	1,720	215,000

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	i) CTs of ratio 250/5A and Class 0.5 for metering and burden 10 VA.				
	ii) 1 No. Class 0.5, 96 Sq.mm. Digital multifunctional meter (0 - 250 A) with Inbuilt Selector Switch.				
	iii) RYB LED Cluster type Indicating Lamps and Control fuses shall be provided.	1		183,953	183,953
03.00.00	MCB DBs			177,035	
	Supplying, fixing, connecting & commissioning the following MCB DISTRIBUTION BOARDS fixed flush with the wall. All DBs shall have Double door. Lighting and Power DB - C curve and UPS DB - D curve			177,035/-	177,035/-
03.01.00	LDB				
	8 Way TPN MCB DB				
	Incomer : 63 Amps 4P ELMCB,30mA .. 1 No.				
	Outgoing : 6 - 16 Amps SP MCB .. 24 Nos.	2	Sets	8,898	17,796
03.02.00	6 Way TPN MCB DB			8514/-	17,028/-
	Incomer : 32 Amps 4P ELMCB,30mA .. 1 No.				
	Outgoing : 6 - 16 Amps SP MCB .. 18 Nos.	0	Sets	0	0
03.03.00	PDB				
	8 Way TPN MCB DB				
	Incomer : 63 Amps 4P ELMCB,30mA .. 1 No.				
	Outgoing : 6 - 16 Amps SP MCB .. 24 Nos.	2	Sets	8,898	17,796
03.04.00	External LDB			8514/-	17,028/-
	8 Way TPN MCB DB				
	Incomer : 63 Amps 4P ELMCB,100mA .. 1 No.				
	Outgoing : 6 - 16 Amps SP MCB .. 24 Nos.	1	Set	8,651	8,651
03.05.00	AHU Vertical DB			8267	8267
	8 Way TPN VERTICAL MCB DB				
	Incomer : 125 Amps 4P MCCB with 25 Ka Ics with standing capacity .. 1 No.				
	Outgoing : 63 Amps TP MCB .. 1 No.				
	Outgoing : 32 Amps TP MCB .. 7 Nos.	1	Set	20,250	20,250
03.06.00	UPS Main Vertical DB			19866	19866
	8 Way TPN VERTICAL MCB DB				
	Incomer : 63 Amps TP2N MCB .. 1 No.				
	Outgoing : 10-32 Amps SP MCB .. 18 Nos	2	Sets	13,202	26,404
04.00.00	FSU/ MCCB / STARTERS			12818	12818
04.01.00	Supplying, erecting, connecting & commissioning 32Amps.4P MCB with DOL Starter for a maximum of 5HP 3 PHASE MOTOR with interconnections and suitably mounted on the wall .	10	Sets	4,177	41,770
04.02.00	Supplying, erecting, connecting & commissioning 63Amps 4P MCB on an angle Iron frame with necessary interconnections, cable box, brackets, screws, bolts, nuts, etc.	5	Sets	2,030	10,150
04.03.00	Supplying, erecting, connecting & commissioning 10 Amps SP MCB in weather proof enclosure with necessary interconnections, brackets, screws, bolts, nuts, etc. for external lighting	7	Sets	706	4,942
04.04.00	Supplying, erecting, connecting & commissioning 63 Amps 4P MCB in weather proof enclosure with necessary interconnections, brackets, screws, bolts, nuts, etc. for Ac control	5	Sets	3,305	16,525
04.05.00	Supplying, erecting, connecting & commissioning 32 Amps 4P MCB on an angle Iron frame with necessary interconnections, cable box, brackets, screws, bolts, nuts, etc.	4	Sets	1,886	7,544
04.06.00	Supplying, erecting, connecting & commissioning PVC weather proof type enclosure and with 100 AMPS 4P MCCB with 25 KA rating on an angle Iron frame with necessary interconnections, cable box, brackets, screws, bolts, nuts, etc.	1	Set	8,113	8,113

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	Supplying, Erecting, Testing & commissioning FLOOR MOUNTED CUBICLE TYPE 14 SWG thick CRCA sheet compartmentalised modular type with powder coated DG PANEL. The Board shall be incorporated with the following:-				
	DG INCOMER 1 : 250 AMPS 4P motorized MCCB with 25 KA Withstanding Capacity Adjustable overload and short circuit relays .. 1 No.				
	DG INCOMER 2 : 315 AMPS 4P motorized MCCB with 25 KA Withstanding Capacity Adjustable overload and short circuit relays .. 1 No.				
	BUS COUPLER : 315 AMPS 4P MCCB with 25 KA Withstanding Capacity Adjustable overload and short circuit relays .. 1 No.				
	Note: All the incomer and Buscoupler are electrical and mechanical interlock with auto/manual selector switch.				
	OUTGOING : 250 AMPS TPN MCCB with 25 KA (Ics) Withstanding Capacity Adjustable overload and short circuit relays ..4 Nos.				
	BUSBAR : ALUMINIUM				
	RATING : 315 AMPS				
	The Phase Bus bar shall be 50 x 10 mm. and the Neutral bar shall be 25 x 06 mm. The Earth Bus bar shall be 2 Runs of 25 x 6 mm.				
	There shall be TWO set of Metering Compartment incorporated with the following:-				
	i) CTs of ratio 250 & 315 /5A and Class 0.5 for metering and burden 10 VA.				
	ii) 1 No. Class 0.5, 96 Sq.mm. Digital multifunctional meter (0 - 200 & 315 A) with Inbuilt Selector Switch.				
	iii) RYB LED Cluster type Indicating Lamps and Control fuses shall be provided.	1	222,737	222,737	
02.04.00	AC PANEL (OUTDOOR TYPE)		217,838	217,838	838/-
	CABLE ENTRY : BOTTOM				
	Supplying, Erecting, Testing & commissioning FLOOR MOUNTED CUBICLE TYPE 14 SWG thick CRCA sheet compartmentalised modular type with powder coated AC PANEL (outdoor type). The Board shall be incorporated with the following:-				
	INCOMER : 250 AMPS 4P MCCB with 25 KA Withstanding Capacity Adjustable overload and short circuit relays .. 1 No.				
	OUTGOING : 125 AMPS TPN MCCB with 25 KA (Ics) Withstanding Capacity Adjustable overload and short circuit relays ..2 Nos.				
	100 AMPS TPN MCCB with 25 KA (Ics) Withstanding Capacity Adjustable/Fixed overload and Fixed short circuit relays ..3 Nos.				
	32 AMPS TPN MCCB with 25 KA (Ics) Withstanding Capacity Adjustable/Fixed overload and Fixed short circuit relays ..5 Nos.				
	BUSBAR : ALUMINIUM				
	RATING : 250 AMPS				
	The Phase Bus bar shall be 40 x 10 mm. and the Neutral bar shall be 25 x 6 mm. The Earth Bus bar shall be 2 Runs of 25 x 3 mm.				
	There shall be ONE set of Metering Compartment incorporated with the following:-				

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	100 AMPS TPN MCCB with Withstanding Capacity Adjustable/Fixed overload and Fixed short circuit relays ..1 No.	25 KA (Ics)				
	63 AMPS TPN MCCB with Withstanding Capacity Adjustable/Fixed overload and Fixed short circuit relays ..3 Nos.	25 KA (Ics)				
	32 AMPS TPN MCCB with Withstanding Capacity Adjustable/Fixed overload and Fixed short circuit relays ..4 Nos.	25 KA (Ics)				
	BUSBAR : ALUMINIUM					
	RATING : 250 AMPS					
	The Phase Bus bar shall be 40 x 10 mm. and the Neutral bar shall be 25 x 6 mm. The Earth Bus bar shall be 2 Runs of 25 x 3 mm.					
	There shall be TWO set of Metering Compartment incorporated with the following:-					
	i) CTs of ratio 200 /5A and Class 0.5 for metering and burden 10 VA.					
	ii) 1 No. Class 0.5, 96 Sq.mm. Digital multifunctional meter (0 - 200 A) with Inbuilt Selector Switch.					
	iii) RYB LED Cluster type Indicating Lamps and Control fuses shall be provided.					
02.02.00	MAIN PANEL - 2		1	Set	211,219	211,219
	CABLE ENTRY : TOP / BOTTOM				197,659	197,659
	Supplying, Erecting, Testing & commissioning FLOOR MOUNTED CUBICLE TYPE 14 SWG thick CRCA sheet compartmentalised modular type with powder coated MAIN PANEL -2. The Board shall be incorporated with the following:-					
	EB & DG INCOMER : 250 AMPS 4P motorized MCCB with 25 KA Withstanding Capacity Adjustable overload and short circuit relays and mechanical interlock between incomers .. 2 Nos.					
	OUTGOING : 250 AMPS TPN MCCB with (Ics) Withstanding Capacity Adjustable overload and short circuit relays ..1 No.	25 KA				
	125 AMPS TPN MCCB with Withstanding Capacity Adjustable/Fixed overload and Fixed short circuit relays ..3 Nos.	25 KA (Ics)				
	100 AMPS TPN MCCB with Withstanding Capacity Adjustable/Fixed overload and Fixed short circuit relays ..3 Nos.	25 KA (Ics)				
	BUSBAR : ALUMINIUM					
	RATING : 250 AMPS					
	The Phase Bus bar shall be 40 x 10 mm. and the Neutral bar shall be 25 x 6 mm. The Earth Bus bar shall be 2 Runs of 25 x 3 mm.					
	There shall be TWO set of Metering Compartment incorporated with the following:-					
	i) CTs of ratio 200 /5A and Class 0.5 for metering and burden 10 VA.					
	ii) 1 No. Class 0.5, 96 Sq.mm. Digital multifunctional meter (0 - 200 A) with Inbuilt Selector Switch.					
	iii) RYB LED Cluster type Indicating Lamps and Control fuses shall be provided.					
02.03.00	DG PANEL		1		235,906	235,906
	CABLE ENTRY : TOP / BOTTOM				2,22,343	2,22,343

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Schedule of Quantity					
Name of Work : Renovation of Koothambalam Complex , Kalakshetra foundation, Chennai					
ITEM NO.	DESCRIPTION	Qty	Unit	JMR	
				Rate	Amount
01.00.00	METER BOARD /ACCESSORIES				
01.01.00	CT METER BOARD				
	Supplying, erecting, connecting & commissioning a floor mounting Angle Iron all metal Meter Board with the following:-				
	3Nos. 300Amps. TP cutouts & 1No. 300 Amps neutral link fixed on a MS Sheet mounted on angle iron frames.				
	Space for fixing 1 No.CT operated Meter on sheet steel / angle iron frame.				
	1 No. 200 Amps Triple Pole and neutral front operated Fuse Switch Unit of AC 23 utilisation category .				
	1 Set of interconnection between Meter and cutout shall be made with solid copper conductor. This shall also be made between Fuse Switch Units and Meter.				
	Supplying and fixing 3 Nos 200/5 A CT as required by EB on copper bus bars.	2	Sets	30,653 24,847	61,306
	Note: Before manufacturing the metering panel get approval from TNEB.				49,694
01.01.00	METER BOARD				
	Supplying, erecting, connecting & commissioning a floor mounting Angle Iron all metal Meter Board with the following:-				
	3Nos. 300Amps. TP cutouts & 1No. 300 Amps neutral link fixed on a MS Sheet mounted on angle iron frames.				
	Space for fixing 1 Nos. 100 Amps Meter on sheet steel / angle iron frame.				
	1 No. 125 Amps TP cutout and neutral link fixed on a MS sheet.				
	1 No. 125 Amps Triple Pole and neutral front operated Fuse Switch Unit of AC 23 utilisation category .				
	1 Set of interconnection between Meter and cutout shall be made with solid copper conductor. This shall also be made between Fuse Switch Units and Meter.	0	Sets	0	0
	Note: Before manufacturing the metering panel get approval from TNEB.				
02.00.00	LT PANEL				
02.01.00	MAIN PANEL - 1				
	CABLE ENTRY : TOP / BOTTOM				
	Supplying,Erecting,Testing & commissioning FLOOR MOUNTED CUBICLE TYPE 14 SWG thick CRCA sheet compartmentalised modular type with powder coated MAIN PANEL -1. The Board shall be incorporated with the following:-				
	EB & DG INCOMER : 250 AMPS 4P motorized MCCB with 25 KA Withstanding Capacity Adjustable overload and short circuit relays and mechincal interlock between incomers .. 2 Nos.				
	OUTGOING : 125 AMPS TPN MCCB with 25 KA (Ics) Withstanding Capacity Adjustable/Fixed overload and Fixed short circuit relays ..1 No.				


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18.01.00	Supplying, erecting and connecting a 5 KG FIRE EXTINGUISHER properly fixed on the wall with necessary clamps, screws, bolts and nuts etc. The extinguisher shall be suitable for all types of fires (A, B & C)	5 NOS	2,900.00	14,500.00	50.00	250.00
18.02.00	Supplying, erecting and connecting Treatment Chart in English and Tamil directly fixed on to the wall with necessary screws etc.	4 NOS	350.00	1,400.00	25.00	100.00
18.03.00	Supplying 440 V Gloves	2 SET	450.00	900.00		
18.04.00	Supplying and laying 1800 mm. x 1200 mm x 6 mm. thick ISI Marked Rubber mats to be laid in Front of the Panel Boards.	10 NOS	1,400.00	14,000.00	25.00	250.00
18.05.00	Supplying and fixing 440 V Danger Board	3 NOS	100.00	300.00	10.00	30.00
18.06.00	First Aid Box	2 SET	450.00	900.00	50.00	100.00
19.00.00	MISCELLANEOUS					
19.01.00	Providing Temporary lighting at site complete with wiring 20 Nos. of 1 x 40 W tube light fitting.	LS	10,000.00	10,000.00	2,500.00	2,500.00
19.02.00	Liasion with Electricity Board to avail 1 CT Meter Board connections including submission of Application Forms and other associated works.	LS			1,25,000.00	1,25,000.00
19.03.00	Liasion with Electricity Board for enhancement of 1 no 100 Amps energy meter to CT Meter Board connections including submission of Application Forms and other associated works.	LS			25,000.00	25,000.00
19.04.00	Shifting of pillar box with cable routing with EB person and related to necessary accessories etc. approximate shifted distance is 25 mtr. works.	LS			7,500.00	7,500.00
19.05.00	LT cable route maker	20 Sets	250.00	5,000.00	200.00	4,000.00
19.06.00	Supplying, erecting, connecting & commissioning WEATHER PROOF HENSEL MAKE JUNCTION BOXES with 6 - 20 Amps SP c curve MCB and supports, Connector and necessary accessories	15 Sets	1,400.00	21,000.00	150.00	2,250.00
19.07.00	Preparation of " As Built Drawings"	LS			10,000.00	10,000.00
	Grand Total			40,51,175.00		9,15,155.00
	Add: Service Tax 10.3% on Erection	10.30%				94,260.97
				40,51,175.00		10,09,415.97
	(Rupees Fifty Lakhs Sixty Thousand Five Hundred and One only)					50,60,590.97
	Discount	3.00%				1,51,817.73
	Total					49,08,773.24


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15.02.00	Fixing, connecting and commissioning Bulk Head Light fittings to be fixed on the Compound Wall with necessary accessories required for the job.	10 Nos				60.00	600.00
16.00.00	JUNCTION BOXES						
16.01.00	Supplying, erecting 14 G thick Junction boxes with cover of 40 mm. height of suitable sizes as per Site conditions. The Junction boxes shall be fixed flush with the floor (powder coated)	500 SQ.FT	120.00	60,000.00		25.00	12,500.00
17.00.00	ADVANCED TYPE LIGHTING PROTECTION						
17.01.00	Supplying, erecting, connecting and commissioning the Dynosphere (CSE TYPE) with necessary foundation plate, mounting screws / bolts, and other associated accessories to complete the system to function	1 Set	90,000.00	90,000.00		5,000.00	5,000.00
17.02.00	Supplying, laying, connecting and commissioning 75 KV 36 mm dia special copper cable (only meant for these applications) in G I pipe for protection of the cable with necessary accessories as required	140 Mtrs	325.00	45,500.00		50.00	7,000.00
17.03.00	Supplying, providing and connecting Eath Gel in the Earth Electrode with necessary accessories. As required by the system	3 Sets	13,500.00	40,500.00		2,000.00	6,000.00
17.04.00	Supplying, erecting, connecting and commissioning a Lightning Event Counter of digital type in weather proof enclosure with necessary accessories	1 Set	20,000.00	20,000.00		1,000.00	1,000.00
17.05.00	Testing and commissioning of the System (Lumpsum)	1 Set				5,000.00	5,000.00
18.00.00	AUTO POWER FACTOR CAPACITOR BANK						
	Supplying, erecting and commissioning of 60 KVAR APFC in the enclosed MS Enclosure with all interconnections of Capacitor Bank for 12 Step Relay APFC shall be incorporated to maintain power factor suitable to accommodate the following capacitor bank with all interconnections						
	10 KVAR - 3 Nos						
	5 KVAR - 3 Nos						
	3 KVAR - 3 Nos						
	2 KVAR - 2 Nos						
	1 KVAR - 1 Nos						
	1 No. Class 1.0 96 Sq.mm Digital Power Factor Meter.	2 Sets	75,000.00	1,50,000.00		1,500.00	3,000.00

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13.01.01	25 mm. dia PVC Conduits	200 Mts	30.00	6,000.00	8.00	1,600.00
13.01.02	32 mm dia. PVC Conduits	300 Mts	40.00	12,000.00	10.00	3,000.00
13.01.03	40 mm. dia PVC Conduits	50 Mts	58.00	2,900.00	15.00	750.00
13.01.04	60 mm. dia PVC Conduits	100 Mts	75.00	7,500.00	20.00	2,000.00
14.00.00	FIXING OF LIGHT FITTINGS (INTERNAL - COMMON AREA)					
14.01.00	Fixing, connecting and commissioning Ceiling light/ Chandilier / wall light Fitting with necessary accessories required for the job.	100 Nos			75.00	7,500.00
14.02.00	Supplying, fixing of Ceiling fan with necessary down rods, clamps, screws etc.	20 Nos	1,450.00	29,000.00	150.00	3,000.00
14.03.00	Supplying, fixing of Exhaust fan with louvers, brackets and necessary, clamps, screws etc.	10 Nos	1,100.00	11,000.00	150.00	1,500.00
14.04.00	Fixing, connecting and commissioning of 2 x 18 W PL SPOT LIGHT FITTING RECESSED DOWN LIGHTER, of PHILIPS MAKE FBS/145/218L with Horizontal lamp position (or) equivalent	50 Nos			90.00	4,500.00
14.05.00	Fixing, connecting and commissioning of 1x 40W PATTI TYPE FITTING PHILIPS MAKE TMC55/136HF fixing in ceiling with all necessary accessories	50 Nos			40.00	2,000.00
14.06.00	Fixing, connecting and commissioning of 2 x36 W CFL RECESSED PHILIPS MAKE FBS470/236 AGHFPS P5 236 (or) equivalent with Electronic Ballast complete fixing in the false ceiling with all necessary accessories	30 Nos			175.00	5,250.00
15.00.00	LIGHT FIXTURES (EXTERNAL)					
	Note : Only Light Fitting and Lamp will be supplied by Client. All other accessories like clamps, screws etc., shall be included in the erection rates.					
15.01.00	Fixing, connecting and commissioning of BOLLARD LIGHT FITTING OF PHILIPS MAKE CAT # HS 360 1x PL C 18 FOR shall be mounted on already constructed pedestal with necessary Weather Proof Junctionboxes, interconnections between the Junction box and the fitting shall be done with 3 Runs of 2.5 Sq.mm. PVC Insulated copper conductor wires in 2 mm. thick PVC conduits concealed in gate pillar with necessary clamps, screws etc. The Junction box shall be made out of 2 mm. thick M.S. Sheet painted with two coats of red oxide primer, 2 A rewirable Fuse units, 1 No. 5 A One way Switch loop in loop out arrangements concealed in the wall of gate pillar.	30 NOS.			1,100.00	33,000.00

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	450 mm (w) x 50 mm (H)	75 Mtrs	650.00	48,750.00	110.00	8,250.00
	300 mm (w) x 50 mm (H)	100 Mtrs	550.00	55,000.00	100.00	10,000.00
10.03.00	Supplying, erecting, connecting & commissioning of the 6 mm thread rod with slotted channel supports and welded in the stress supports for the GI trunking and related to all accessories etc.	300 Mtrs	160.00	48,000.00	50.00	15,000.00
11.00.00	GI TRUNKING					
	Supplying, fabricating, laying and connecting the following GI TRUNKING with cover of 1.6 mm. Thick embedded in the floor (or) open in ceiling / laid in below false flooring with thread rod and rail supports including of L shape, T shape and necessary support, clamps screws and all accessories etc.					
	100 X 45 mm	200 MTS	350.00	70,000.00	60.00	12,000.00
	150 X 45 mm	100 MTS	425.00	42,500.00	75.00	7,500.00
	200 X 45 mm	50 MTS	475.00	23,750.00	90.00	4,500.00
12.00.00	ERECTING OF SPEAKER EQUIPMENT.					
12.01.00	Erecting of wall mounted speaker with anchor fastener for 10 kgs weight with supports and clamp will be supplied by client	100 Nos			150.00	15,000.00
12.02.00	Erecting of ceiling hung speaker with rope support upto 50 kgs weight for sub hopper with supports and clamp will be supplied by client	4 set			750.00	3,000.00
12.03.00	Laying of 2 core speaker cable in trunking and conduit etc.	500 Mts			12.00	6,000.00
12.04.00	Laying of 20 core speaker cable in trunking and conduit etc.	500 Mts			25.00	12,500.00
12.05.00	Laying of 4 core speaker cable in trunking and conduit etc.	500 Mts			15.00	7,500.00
12.06.00	Erecting, flush mounted output and input module box in the wall and proper civil finishing box will be supplied by client	20 Nos			150.00	3,000.00
12.07.00	Erecting, flush mounted of connector terminal and make suitable for 4 module powder coated ms base box for the terminal will be supplied by client	20 Nos			75.00	1,500.00
13.00.00	EMPTY PVC CONDUITS					
13.01.00	Supplying, laying of Heavy duty PVC conduit laid in floor / concealed in wall / partitions with accessories, necessary clamps, screws etc.					

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09.05.00	Supplying, laying and connecting 25x6mm. CU Flat laid in open fashion with necessary clamps, screws, interlinks etc. for earthing the Panels / Stabilizer / DG body earthing etc.,	100 Mtrs.	810.00	81,000.00	30.00	3,000.00
09.06.00	Supplying, laying and connecting 500mm. Long 25 x 6mm. GI Flat laid with SMC Insulator in open fashion with necessary clamps, screws, etc. as earth link	4 Sets	350.00	1,400.00	100.00	400.00
09.07.00	Supplying, laying, connecting and commissioning 8 SWG bare enamelled copper wire enclosed in PVC Conduits with necessary clamps, screws etc. for earthing AC Equipments / motors etc	150 Mtrs.	75.00	11,250.00	15.00	2,250.00
09.08.00	Supplying, laying, & connecting 500mm. long 25x6mm.Copper flat with SMC Insulator in open fashion with necessary clamps, screws, etc. as earth link for UPS	3 Sets	650.00	1,950.00	150.00	450.00
09.09.00	Supplying, laying, & connecting 500mm. long 25x6mm.Copper flat with SMC Insulator in open fashion with necessary clamps, screws, etc. as earth link for Data Earthing	10 Sets	250.00	2,500.00	100.00	1,000.00
09.10.00	Supplying, laying and connecting 25 Sq.mm. PVC Insulated copper conductor wires in PVC Conduits laid open fashion with necessary clamps, screws, interlinks etc	100 Mtrs	190.00	19,000.00	25.00	2,500.00
10.00.00	CABLE TRAY					
10.01.00	Supplying, fabricating, erecting,connecting & commissioning of the Powder coated Cable Trays with necessary Angle irons for cable supports and other allied fabrication works. Fixing to concrete surfaces shall be done with help of expandable type anchor fastners capable of bearing a weight of 500 Kgs. Fixing to brick walls shall be done with grouting. The distance between two supports shall be 600mm. The materials and labour for grouting, cable supports and other allied fabrication work shall supplied by the Contractor at no extra cost.	1000 Kgs	60.00	60,000.00	15.00	15,000.00
10.02.00	Supplying, fabricating, erecting,connecting & commissioning of the Perforated type GI Cable Trays with necessary Angle irons for cable supports and other allied fabrication works. Fixing to concrete surfaces shall be done with help of expandable type anchor fastners capable of bearing a weight of 500 Kgs. Fixing to brick walls shall be done with grouting. The distance between two supports shall be 2000mm. The materials and labour for grouting, cable supportsand Provision for fixing allied fabrication work shall supplied by the contractor with provision for fixing GI flats Throughout with connection point once every metrs.on both sides all supports shall be with threaded rods once every 1500mm.					
	600 mm (w) x 50 mm (H)	75 Mtrs	760.00	57,000.00	125.00	9,375.00

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	The cost of supplying, Laying and Pulling for Circuit Mains with 3 Runs of 1.5 Sq.mm PVC Insulated Multistranded Copper conductor wires in PVC Conduits concealed in wall/ ceiling or open above false ceiling (The average length shall be 7Mtrs from switch board to light point and 10 mtr from DB to switch board) shall be included in the Point rate for Light, Fan, Exhaust Fan 6 Amps Sockets Etc.,						
09.00.00	EARTHING						
09.01.00	Supplying, installing and connecting a 2.5Mtr.long 40mm. Dia G.I Pipe with holes drilled diametrically opposite to each other once every 150mm. in an earth pit of 380x380x3500mm. filled with salt and charcoal mixed with sand in alternate layers 150mm. each upto a height of 3000mm. from bottom. The pipe shall have provision for watering through a funnel. It shall also have porovision for connecting 50 x6mm.G.I Flat on two sides. A masonry structure shall be constructed to a depth of 450 mm. and a Medium duty CI Cover shall be used to cover the pit. The cost of digging and back filling shall also be included. Sand, salt and charcoal are in the Contractor's scope	8 Sets	2,500.00	20,000.00	2,000.00	16,000.00	
09.02.00	Supplying, installing and connecting a Copper plate of size 600mm x 600mm x 3 mm. at a depth of 3000 mm. filled with salt and charcoal mixed with sand in alternate layers 150 mm. each upto a height of 3000 mm. from bottom. Two copper flats of 25 x 6 mm. shall be braced to this copper plate throughout the overlaping length with the copper plate and brought to the surface of the earthpit. This copper flat shall have provision for connecting wires of flats as the case may be. A suitable size of 40 mm. dia GI Pipe shall be provided uptil the bottom of the earth pit. This GI Pipe shall have provision for watering through a funnel. A masonry structre shall be constructed to a depth of 450mm. and a heavy duty CI Cover shall be used to cover the pit. The Ccost of digging and back filling shall also be included. Sane, salt and charcoal are in the Contractor's scope.	6 Sets	12,000.00	72,000.00	2,500.00	15,000.00	
09.03.00	Supplying, laying and connecting 50x6mm. G.I Tape wound in half lapped fashion with bituminous tape painted at a depth of 600mm. In ground to interconnect the earth electrodes. The tape shall not come into contact with any unnecessary metal parts or cables along with its route	100 Mtrs.	200.00	20,000.00	30.00	3,000.00	
09.04.00	Supplying, laying and connecting 25x6mm. GI Flat laid in open fashion with necessary clamps, screws, interlinks etc. for earthing the Panels / Stablizer / DG body earthing etc.,	300 Mtrs.	100.00	30,000.00	20.00	6,000.00	

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07.12.00	Supplying, fixing, connecting and commissioning of 10 - 16 AMPS SPN MENNEKES make 3 pin and type plug and socket in Manufacturer's mounting box fixed flush with the wall. For music equipment. (Indian model)	200 Nos.	900.00	1,80,000.00	100.00	20,000.00
07.13.00	Supplying and laying of 25 mm. Dia Heavy duty PVC Conduits concealed / open in wall / ceiling etc. with necessary clamps, screws etc. with 1 Run of 16 SWG G.I Fish Wire.	600 Mtrs.	30.00	18,000.00	10.00	6,000.00
07.14.00	Supplying and laying of 32 mm.Dia Heavy duty PVC Conduits concealed / open in wall / ceiling etc. with necessary clamps, screws etc. with 1 Run of 16 SWG G.I.Fish wire.	1200 Mtrs	38.00	45,600.00	12.00	14,400.00
08.00.00	LIGHT POINT WIRING					
08.01.00	Supplying, wiring, connecting and commissioning the light points with 3 Runs of 1.5 Sq.mm. PVC insulated multistranded Copper Conductor wires (One each for phase, Neutral and Earth) in Heavy duty PVC Conduits concealed in wall / Ceiling or open above false ceiling with necessary clamps screws etc. including supplying and fixing 6 Amps. Switch in manufacturers mounting box fixed flush with the wall					
08.01.01	One light Controlled by one Switch	100 Pts.	550.00	55,000.00	90.00	9,000.00
08.01.02	Same as above item with additional light point	70 Pts.	420.00	29,400.00	60.00	4,200.00
08.02.00	Same as the Item No.08.01.00 but for 6 Amps. Independent switched socket combined including supplying and fixing 6Amps Switched Socket.	10 Pts.	1,150.00	11,500.00	200.00	2,000.00
08.02.00	Same as the Item No.08.01.00 but for Ceiling Fan points including supplying, and fixing concealed type fan hook box and electronic regulator.	20 Pts	1,200.00	24,000.00	150.00	3,000.00
08.03.00	Same as Item No.08.01.01 but for TWO WAY LIGHT POINTS with 2 Nos. 6 Amps. Switches.	10 Pts	850.00	8,500.00	150.00	1,500.00
08.04.00	Same as the Item No.08.01.00 but for TWO WAY Fan POINTS with 2 Nos. 6 Amps. Switches.	5 Pts	1,350.00	6,750.00	200.00	1,000.00
08.05.00	Same as the Item No.08.01.00 but for Exhaust Fan points	10 Pts	600.00	6,000.00	100.00	1,000.00
08.06.00	Same as the Item No.08.01.00 but for Wall Mounted Fan Points	2 Pts	650.00	1,300.00	125.00	250.00
	Note:-					

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07.02.00	Supplying and fixing 6 / 16 Amps switched socket in Manufacturer's mounting box fixed flush with the wall	25 Nos	340.00	8,500.00	50.00	1,250.00
07.03.00	Supplying, fixing, connecting & commissioning 20 Amps Metal clad socket combined with 20 Amps DP MCB as control in Manufacturer's mounting box filled flush with the wall and all necessary accessories etc.	10 Nos.	750.00	7,500.00	100.00	1,000.00
07.04.00	Supplying, laying, connecting & commissioning 2 Runs of 6 Sq.mm with 1 Runs of 2.5 Sqmm. PVC Insulated stranded single core copper conductor FRLS wire for continuous earthing in PVC Conduits open above false ceiling or concealed in wall / ceiling with necessary clamps, screws etc.,	450 Mts.	130.00	58,500.00	25.00	11,250.00
07.05.00	Supplying, fixing, connecting & commissioning 32 Amps SPN Metal clad socket combined with 32Amps DP as control in Manufacturer's mounting box fixed flush with the wall	5 Nos.	1,100.00	5,500.00	150.00	750.00
07.06.00	Supplying and fixing 6 Amps Switched Socket in Manufacturer's mounting box fixed flush with the wall	30 Nos	275.00	8,250.00	40.00	1,200.00
07.07.00	Supplying, laying, connecting & commissioning 3 Runs of 2.5 Sq.mm.PVC Insulated stranded single core copper conductor FRLS wire for continuous earthing in already laid PVC Conduits open above false ceiling or concealed in wall / ceiling with necessary lamps, screws etc from DB to Power Points	800 Mts.	55.00	44,000.00	10.00	8,000.00
07.08.00	Supplying, laying, connecting & commissioning 3 core 2.5 Sq.mm. PVC Insulated flexiable copper cable in already laid PVC Conduits (or) open in ceiling or concealed in wall / ceiling with necessary lamps, screws etc from DB to stage focus light point	1200 Mts.	68.00	81,600.00	10.00	12,000.00
07.09.00	Supplying, laying, connecting & commissioning 3 core 4 Sq.mm. PVC Insulated flexiable copper cable in already laid PVC Conduits (or) GI tray open in ceiling or concealed in wall / ceiling with necessary lamps, screws etc from DB to stage focus light point.	2800 Mts.	85.00	2,38,000.00	12.00	33,600.00
07.10.00	Supplying, laying, connecting & commissioning 3 core 6 Sq.mm. PVC Insulated flexiable copper cable in already laid PVC Conduits (or) GI tray open in ceiling or concealed in wall / ceiling with necessary lamps, screws etc from DB to stage focus light point.	300 Mts.	135.00	40,500.00	15.00	4,500.00
07.11.00	Supplying, fixing, connecting and commissioning of 16 Amps SPN MENNEKES make schuko model of 2 pin and type plug and socket in Manufacturer's mounting box fixed flush with the wall. For music equipment.(german make)	40 Nos.	1,050.00	42,000.00	125.00	5,000.00

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	3 1/2 x 35 Sq. mm. Al.	10 Nos	500.00	5,000.00	125.00	1,250.00
	3 1/2 x 25 Sq. mm. Al.	8 Nos	500.00	4,000.00	100.00	800.00
	4C x 16 Sq. mm. Al.	10 Nos	500.00	5,000.00	100.00	1,000.00
	4C x 10 Sq. mm. Al.	8 Nos	450.00	3,600.00	100.00	800.00
	3C x 2.5 Sq. mm. Cu.	16 Nos	150.00	2,400.00	50.00	800.00
	4C x 2.5 Sq. mm. Cu.	10 Nos	175.00	1,750.00	60.00	600.00
06.00.00	MAINS WIRING					
06.01.00	Supplying, laying, connecting & commissioning 4 Runs of 25 Sq. mm. with 2 Runs of 16 Sq. mm. PVC Insulated stranded single core copper conductor FRLS wire for continuous earthing in heavy duty PVC conduits open above false ceiling or concealed in wall / ceiling with necessary lamps, screws etc. for ups input.	30 Mts.	950.00	28,500.00	125.00	3,750.00
06.02.00	Supplying, laying, connecting & commissioning 5 Runs of 25 Sq. mm. with 2 Runs of 16 Sq. mm. PVC Insulated stranded single core copper conductor FRLS wire for continuous earthing in heavy duty PVC conduits open above false ceiling or concealed in wall / ceiling with necessary lamps, screws etc. for ups DB.	125 Mts.	110.00	13,750.00	150.00	18,750.00
06.03.00	Supplying, laying, connecting & commissioning 4 Runs of 10 Sq. mm. with 2 Runs of 4 Sq. mm. PVC Insulated stranded single core copper conductor FRLS wire for continuous earthing in heavy duty PVC conduits open above false ceiling or concealed in wall / ceiling with necessary lamps, screws etc.	30 Mts.	425.00	12,750.00	75.00	2,250.00
06.04.00	Supplying, laying, connecting & commissioning 4 Runs of 6 Sq. mm. with 2 Runs of 2.5 Sq. mm. PVC Insulated stranded single core copper conductor FRLS wire for continuous earthing in heavy duty PVC conduits open above false ceiling or concealed in wall / ceiling with necessary lamps, screws etc.	30 Mts.	360.00	10,800.00	60.00	1,800.00
07.00.00	RAW / POWER WIRING					
07.01.00	Supplying, laying, connecting & commissioning 2 Runs of 4 Sq. mm. with 1 Run of 2.5 Sq. mm. PVC Insulated stranded single core copper conductor FRLS wire for continuous earthing in already laid PVC conduits open above false ceiling or concealed in wall / ceiling with necessary lamps, screws etc from DB to power points.	1500 Mts.	75.00	1,12,500.00	10.00	15,000.00

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	Supplying, laying, connecting & commissioning the following 1.1 KV Grade AYFY / AYWY (or) YWY / YFY Under ground cables with XLPE Insulation with necessary clamps, screws, etc in the following methods :-						
05.01.00	BURIED UNDERGROUND / LAID IN TRENCH (Inclusive of digging, back filling, bricks sand etc.)						
	3 1/2 x 240 Sq. mm. Al.	100 MTRS.	650.00	65,000.00	200.00	20,000.00	
	3 1/2 x 150 Sq. mm. Al.	400 MTRS.	415.00	1,66,000.00	170.00	68,000.00	
	3C x 2.5 Sq. mm. Cu.	400 MTRS.	90.00	36,000.00	120.00	48,000.00	
	4C x 2.5 Sq. mm. Cu.	250 MTRS.	110.00	27,500.00	120.00	30,000.00	
	4C x 16 Sq. mm. Al.	100 MTRS.	115.00	11,500.00	145.00	14,500.00	
05.02.00	CLAMPED ALONG WALL / CEILING						
	Note : Supply of Anchor Fastners and necessary 1.5 mm thick GI Flat, clamps shall be included in the cost.						
	3 1/2 x 185 Sq. mm. Al.	175 MTRS.	525.00	91,875.00	40.00	7,000.00	
	3 1/2 x 150 Sq. mm. Al.	100 MTRS.	415.00	41,500.00	40.00	4,000.00	
	3 1/2 x 50 Sq. mm. Al.	100 MTRS.	210.00	21,000.00	35.00	3,500.00	
	3 1/2 x 35 Sq. mm. Al.	300 MTRS.	165.00	49,500.00	30.00	9,000.00	
	3 1/2 x 25 Sq. mm. Al.	200 MTRS.	130.00	26,000.00	30.00	6,000.00	
	4C x 16 Sq. mm. Al.	400 MTRS.	115.00	46,000.00	30.00	12,000.00	
	4C x 10 Sq. mm. Al.	100 MTRS.	90.00	9,000.00	25.00	2,500.00	
	3C x 2.5 Sq. mm. Cu.	100 MTRS.	90.00	9,000.00	15.00	1,500.00	
05.03.00	TERMINATION						
	Supplying, terminating, connecting and commissioning the above Underground cables with Double compression type glands. The cost of earthing gland with copper strips / Wires shall also be included. The cables shall be terminated with Al / Copper lugs after crimping.						
	3 1/2 x 240 Sq. mm. Al.	10 Nos	1,000.00	10,000.00	200.00	2,000.00	
	3 1/2 x 185 Sq. mm. Al.	2 Nos	850.00	1,700.00	200.00	400.00	
	3 1/2 x 150 Sq. mm. Al.	16 Nos	800.00	12,800.00	150.00	2,400.00	
	3 1/2 x 50 Sq. mm. Al.	2 Nos	600.00	1,200.00	125.00	250.00	

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03.06.00	8 Way TPN VERTICAL MCB DB						
	Incomer : 63 Amps TP2N MCB. 1 No.						
	Outgoing : 10 - 32 Amps SP MCB : 18 Nos.	2 Sets	8,500.00	17,000.00	700.00	1,400.00	
04.00.00	FSU / MCCB / STARTERS						
04.01.00	Supplying, erecting, connecting & commissioning 32 Amps, 4P MCB with DOL starter for a maximum of 5HP 3 PHASE MOTOR with interconnections and suitably mounted on the wall.	10 Set	4,000.00	40,000.00	250.00	2,500.00	
04.02.00	Supplying, erecting, connecting & commissioning 3 Amps 4P MCB on an angle Iron frame with necessary interconnections, cable box, brackets, screws, bolts, nuts etc.	5 Set	1,450.00	7,250.00	150.00	750.00	
04.03.00	Supplying, erecting, connecting & commissioning 10 Amps SP MCB in weather proof enclosure with necessary interconnections, cable box, brackets, screws, bolts, nuts etc. for external lighting.	7 Set	650.00	4,550.00	100.00	700.00	
04.04.00	Supplying, erecting, connecting & commissioning 63 Amps 4P MCB in weather proof enclosure with necessary interconnections, cable box, brackets, screws, bolts, nuts etc. for A/c. control.	5 Set	2,750.00	13,750.00	150.00	750.00	
04.05.00	Supplying, erecting, connecting & commissioning 32 Amps 4P MCB on an iron frame with necessary interconnections, cable box, brackets, screws, bolts, nuts etc.	4 Set	1,400.00	5,600.00	150.00	600.00	
04.06.00	Supplying, erecting, connecting & commissioning PVC weatgher proof type enclosure and with 100 AMPS 4P MCCB with 25 KA rating on an angle Iron frame with necessary interconnections, cable box, brackets, screws, bolts, nuts etc.	1 Set	8,500.00	8,500.00	400.00	400.00	
04.07.00	Supplying, erecting, connecting & commissioning PVC weatgher proof type enclosure and with 32 AMPS TPN metal clad socket with 4P MCB on an angle Iron frame with necessary interconnections, cable box, brackets, screws, bolts, nuts etc.	10 Sets	3,750.00	37,500.00	300.00	3,000.00	
05.00.00	CABLES / TERMINATIONS						

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	There shall be ONE set of Metering Compartment incorporated with the following :						
	i) CTs of ratio 250 & 315 / 5A and Class 0.5 for metering and burden 10 VA.						
	ii) 1 No. Class 0.5 96 Sq.mm. digital multifunctional meter (0 - 250 A) with Inbuilt						
	iii) RYB LED Cluster type Indicating Lamps and Control fuses shall be provided.	1		1,38,000.00	1,38,000.00	4,000.00	4,000.00
03.00.00	MCB DBs						
	Supplying, Fixing, connecting & commissioning the following MCB DISTRIBUTION BOARDS fixed flush with the wall. All DBs shall have Double door. Lighting and power DB - C curve and UPS DB - D curve.						
03.01.00	LDB						
	8 way TPN MCB DB						
	Incomer : 63 Amps 4P ELMCB, 30 mA. 1 No.						
	Outgoing : 6 - 16 Amps SP MCB. 24 Nos.						
03.02.00	6 Way TPN MCB DB	2 Sets		8,000.00	16,000.00	700.00	1,400.00
	Incomer : 32 Amps 4P ELMCB, 30 mA. 1 No.						
	Outgoing : 6 - 16 Amps SP MCB : 18 Nos.	RO Sets		7,400.00		700.00	
03.03.00	PDB						
	8 Way TPN MCB DB						
	Incomer : 63 Amps 4P ELMCB, 30 mA. 1 No.						
	Outgoing : 6 - 16 Amps SP MCB : 24 Nos.	2 Sets		8,000.00	16,000.00	700.00	1,400.00
03.04.00	External LDB						
	8 Way TPN MCB DB						
	Incomer : 63 Amps 4P ELMCB, 100 mA. 1 No.						
	Outgoing : 6 - 16 Amps SP MCB : 24 Nos.	1 Set		8,000.00	8,000.00	700.00	700.00
03.05.00	AHU Vertical DB						
	8 Way TPN VERTICAL MCB DB						
	Incomer : 125 Amps 4P MCCB with 25 KA Ics with standing capacity . 1 No						
	Outgoing : 63 Amps TP MCB : 1 No.						
	Outgoing : 32 Amps SP MCB : 7 Nos.	1 Set		16,500.00	16,500.00	900.00	900.00
	UPS Main Vertical DB						

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	DG INCOMER 2: 315 AMPS 4P motorized MCCB with 25 KA withstanding capacity Adjustable overload and short circuit relays. 1 No.					
	BUS COUPLER : 315 AMPS 4P MCCB with 25 KA withstanding capacity Adjustable overload and short circuit relays. 1 No.					
	Note : All the incomer and Buscoupler are electrical and mechanical interlock with auto / manual selector switch.					
	OUTGOING : 250 AMPS TPN MCCB with 25 KA (lcs) withstanding capacity Adjustable overload and short circuit relays. 4 Nos.					
	BUS BAR : ALUMINIUM					
	RATING : 315 AMPS					
	The Phase Bus bar shall be 50 x 10 mm, and the Neutral bar shall be 25 x 06 mm. The Earth Bus bar shall be 2 Runs of 25 x 6 mm.					
	There shall be Two set of Metering Compartment incorporated with the following :					
	i) CTs of ratio 250 & 315 / 5A and Class 0.5 for metering and burden 10 VA.					
	ii) 1 No. Class 0.5, 96 Sq.mm. digital multifunctional meter (0 - 250 A) with Inbuilt Selectro Switch.					
	iii) RYB LED Cluster tuype Indicating Lamps and Control fuses shall be provided.	1	2,65,000.00	2,65,000.00	5,000.00	5,000.00
02.04.00	AC PANEL (OUTDOOR TYPE)					
	CABLE ENTRY : BOTTOM					
	Supplying, Erecting, Testing & Commissining FLOOR MOUNTED CUBICLE TYPE 14 SWG thick					
	INCOMER : 250 AMPS 4P motorized MCCB with 25 KA withstanding capacity Adjustable overload					
	OUTGOING : 125 AMPS TPN MCCB with 25 KA (lcs) withstanding capacity Adjustable overload and short circuit relays. 2 Nos.					
	100 AMPS TPN MCCB with 25 KA (lcs) withstanding capacity Adjustable / Fixed overload and Fixed short circuit relays.3 Nos.					
	32 AMPS TPN MCCB with 25 KA (lcs) withstanding capacity Adjustable / Fixed overload and Fixed short circuit relays.5 Nos.					
	BUS BAR : ALUMINIUM					
	RATING : 250 AMPS					
	The Phase Bus bar shall be 40 x 10 mm, and the Neutral bar shall be 25 x 6 mm. The Earth Bus					

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	Supplying, Erecting, Testing & Comissining FLOOR MOUNTED CUBICLE TYPE 14 SWG thick CRCA sheet compartmentalised modular type with powder coated MAIN PANEL - 2. The Board shall be icorported with the following :						
	EB & DG INCOMER : 250 AMPS 4P motorized MCCB with 25 KA withstanding capacity Adjustable overload and short circuit relays and mechanical interlock between incomers. 2 Nos.						
	OUTGOING : 250 AMPS TPN motorized MCCB 25 KA (lcs) withstanding capacity Adjustable overload and short circuit relavs . 1 No.						
	125 AMPS TPN MCCB with 25 KA (lcs) withstanding capacity Adjustable / Fixed overload and fixed short circuit relavs - 3 Nos.						
	100 AMPS TPN MCCB with 25 KA (lcs) withstanding capacity Adjustable / Fixed overload and fixed short circuit relavs - 3 Nos.						
	BUS BAR : ALUMINIUM						
	RATING : 250 AMPS						
	The Phase Bus Bar shall be 40 x 10 m, and the Neutral bar shall be 25 x 6 mm. The Earcht Bus bar shall be 2 Runs of 25 x 3 mm.						
	There shall be TWO set of Metering Compartment incorporated with the following :						
	i) CTs of ratio 200 / 5A and Class 0.5 for meteting and burden 10 VA.						
	ii) 1 No. Class 0.5, 96 Sq.mm Digital multifunctional meter (0 - 200 A) with Inbuilt Selector Switch.						
	iii) RB LED Cluster type Indicating Lamps and Cotrol fuses shall be provided.	1		2,30,000.00	2,30,000.00	5,000.00	5,000.00
02.03.00	DG PANEL						
	CABLE ENTRY : TOP / BOTTOM						
	Supplying, Erecting, Testing & Comissining FLOOR MOUNTED CUBICLE TYPE 14 SWG thick CRCA sheet compartmentalised modular type with powder coated DG PANEL. The Board shall be icorported with the foollowing :						
	DG INCOMER 1 : 250 AMPS 4P motorized MCCB with 25 KA withstanding capacity Adjustable overload and short circtuit relavs. 1 No.						

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02.00.00	LT PANEL						
02.01.00	MAIN PANEL - 1						
	CABLE ENTRY : TOP / BOTTOM						
	Supplying, Erecting, Testing & commissioning FLOOR MOUNTED CUBICLE TYPE 14 SWG thick CRC sheet compartmentalised modular type with powder coated MAIN PANEL - 1. The Board shall be incorporated with the following.						
	EB & DG INCOMER : 250 AMPS 4P motorized MCCB with 25 KA withstanding capacity Adjustable overload and short circuit relays and mechanical interlock between incomers. 2 Nos.						
	OUTGOING : 125 AMPS TPN MCCB with 25 KA (lcs) withstanding capacity Adjustable / Fixed overload and Fixed short circuit relays : 1 Nos.						
	100 AMPS TPN MCCB with 25 KA (lcs) withstanding capacity Adjustable / Fixed overload and Fixed shortcut relays : 1 No.						
	63 AMPS TPN MCCB with 25 KA (lcs) withstanding capacity Adjustable / Fixed overload and Fixed short circuit relays : 3 Nos.						
	32 AMPS TPN MCCB with 25 KA (lcs) withstanding capacity Adjustable / Fixed overload and Fixed shortcut relays : 4 Nos.						
	BUSBAR : ALUMINIUM						
	RATING : 250 AMPS						
	The phase Bus bar shall be 40 x 10 mm, and the Neutral bar shall be 25 x 6 mm. The Earth Bus bar shall be 2 Runs of 25 x 3 mm.						
	There shall be Two set of Metering Compartment incorporated with the following:						
	i) CTs of ratio 200/5A and class 0.5 for metering and burden 10 VA.						
	ii) 1 No. class 0.5, 96 Sq. mm. Digital multifunctional meter (0 - 200 A) with Inbuilt Selector Switch.						
	iii) RYB LED Cluster type Indicating Lamps and Control fuses shall be provided.	1 Set	2,16,000.00	2,16,000.00	5,000.00	5,000.00	
02.02.00	MAIN PANEL - 2						
	CABLE ENTRY : TOP / BOTTOM						

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**BILL OF QUANTITIES / SCHEDULE OF WORKS FOR ELECTRICAL INSTALLATION TO BE CARRIED OUT FOR
PROPOSED FOR M/S.KALAKSHETRA AT CHENNAI**

Annexure I - awarded items (alongwith cost)

ITEM NO	DESCRIPTION	QTY.		SUPPLY		ERECTION	
				RATE	AMOUNT	RATE	AMOUNT
				RS.	RS.	RS.	RS.
01.00.00	METRE BOARD / ACCESSORIES						
01.01.00	CT METER BOARD						
	Supplying, erecting, connecting & commissioning a floor mounting Angle iron all metal Meter Board with the following						
	3 Nos.300 Amps. TP cutouts & 1 No. 300 amps neutral link fixed on a MS Sheet mounted on angle iron frames						
	Space for fixing 1 No. CT operated Meter on sheet steel / angle iron frame						
	1 No.200 Amps Triple pole and neutralfront operated Fuse Switch Unit of AC 23 utilisation category.						
	1 Set of interconnection between Meter and cutout shall be made with solid copper conductor. This shall also be made between Fuse Switch Units and Meter.						
	Supplying and fixing 3 Nos 200 / 5 A CT as required by EB on copper bus bars.	2 Sets		29,500.00	59,000.00	1,000.00	2,000.00
	Note: Before manufacturing the metering panel get approval from TNEB						
01.01.00	METER BOARD						
	Supplying, erecting, connecting & commissioning a floor mounting Angle Iron all metal Meter Board with the following:						
	3 Nos. 300 Amps. TP cutouts & 1 No. 300 Amps neutral link fixed on a MS Sheet mounted on angle iron frames.						
	Space for fixing 1 Nos. 100 Amps Meter on sheet steel /angle iron frame.						
	1 No. 125 Amps TP cutout and neutral link fixed on a MS Sheet.						
	1 No. 125 Amps Triple Pole and neutral front operated Fuse Switch Unit of AC 23 utilisation category						
	1 Set of interconnection between Meter and cutout shall be made with solid copper conductor. This shall also be made between Fuse Switch Units and Meter.	RO	Sets	22,500.00		1,000.00	

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Name of work: Roof insulation board fixing work at Koothambalam

s.No	Description of work	Qty as specified	unit	Rate /unit arranged by kalakshetra at free cost	Total	CPWD Justified rate	
						Rate / unit	Total amount
1	Supply of Anutone board as specified by the consultant	2550.00	sqm	130	331500	130	331500
3	Labour for fixing anutone sheet including cutting and placing in position	10.00	cum	55000	550000	11077	110770
4	Removing and refit the existing battens available at site for the roof	15.00	cum	150000	2250000	138654	2079810
5	Providing and fixing C.P.Teakwood over existing battens as per the item No.126 in the main work order	2550.00	sqm	55	140250	22	56100
	Prepare the surface and apply one coat approved water bound emulsion paint				3271750	693570	2578180
	% increased					26.90%	

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
156	Providing and laying stone slab in skirting and risers of steps, of uniform thickness with machine cut edges, in profiles laid on a bed of 20 mm thick cement mortar 1:4 with coarse sand including dressing of sides and tops laying slabs in cement slurry pigmented to match the shade of slabs pointing of joints cleaning excess mortar/slurry etc. curing, complete : 25 mm Rough Split Stone : Black Cuddapa stone	15.00	Sqm	800.00	12,000.00	880.58	13,208.70
Wooden Flooring							
157	Providing and laying wood flooring over plain levelled and dried sub floor and hard wood timber frame including tongue and groove jointing system, in patterns including wax polishing the top surface and antitermite treatment and a coat of wooden primer, to the hidden surfaces and fixing with stainless steel screws etc., complete (timber frame shall be paid for separately) : 20 mm thick : 2nd class CP teak wood	125.00	Sqm	5380.00	6,72,500.00	4250.60	5,31,325.00
Paints - Wood and metal surfaces							
158	Providing three finish coats of synthetic enamel colour paint, applied evenly and finished to approved texture, including, preparation of surface and a coat of primer, complete : Wooden surfaces with approved primer	850.00	Sqm	130.00	1,10,500.00	86.75	73,737.50
159	Providing three finish coats of synthetic enamel colour paint, applied evenly and finished to approved texture, including, preparation of surface and a coat of primer, complete : Steel surfaces with zinc chromate primer	350.00	Sqm	140.00	49,000.00	86.75	30,362.50
Paints - Walls & Ceilings							
160	Providing three finish coats of water-proof cement colour paint to walls and ceilings, applied evenly to give uniform finish in colour patterns and even shade, including curing, preparation of surface and a coat of matching primer, complete.	285.00	Sqm	60.00	17,100.00	76.40	21,774.00
161	Providing three finish coats of dry colour distemper to walls and ceilings applied evenly to give a uniform finish including preparation of surfaces, primer coat of whitening, to give an even shade.	1000.00	Sqm	80.00	80,000.00	71.05	71,050.00
					2,19,09,505.00		1,75,06,117.73
Rebate						say	1,75,06,135.00
Deduct 71,72 & 76							
CPWD rate * prevailing rate from December 2009 to December 2010							
% increased					44,03,370.00	25.15% plus	

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
154	Providing and laying colour sand stone slab flooring, laid in patterns and profiles on a bed of 25 mm average thick cement mortar 1:4 (with coarse sand) to make up a total thickness of 50 mm, including laying slabs in cement slurry, pigmented to match the shade of slabs, grinding, rubbing and polishing complete : 18 / 20mm thick : Yellow Jaisalmer stone	20.00	Sqm	650.00	13,000.00	990.99	19,819.80
155	Providing and laying colour sand stone slab treads and of steps in a single piece, of uniform thickness, with machine cut edges, laid on a bed of 20 mm thick cement mortar 1:4 (with coarse sand), laying slabs in cement slurry pigmented to match the shade of slabs, grinding, rubbing polishing, complete (length up to 1500 mm) : 25 mm thick : Grey Kotah stone	25.00	Sqm	800.00	20,000.00	928.79	23,219.75

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
143	do - do Plain BWP type phenol formaldehyde synthetic resin bonded pressed particle board sheets conforming to IS 3087.	75.00	Sqm	700.00	52,500.00	518.75	38,906.25
	Brick flooring						
144	Providing and laying brick on edge flooring with bricks of class 75 including preparation of sub-base/surface, dressing of ground, if any, to required profiles, cement slurry, etc., complete, in cement mortar using coarse sand, of mix : 1:4	160.00	Sqm	700.00	1,12,000.00	493.85	79,016.00
145	FLOORING Add for brick flooring laid diagonal herring bone bond or other pattern.	160.00	Sqm	750.00	1,20,000.00	493.85	79,016.00
	Concrete flooring						
146	Providing and laying cement concrete flooring 1:2:4, finished with a floating coat of neat cement including cement slurry, laid in panels, in floors, landing, steps and similar locations, including nosing of steps .etc. where required, complete : 25 mm thick	225.00	Sqm	250.00	56,250.00	262.45	59,051.25
147	Providing and laying cement concrete flooring 1:2:4, finished with a floating coat of neat cement including cement slurry, laid in panels, in floors, landing, steps and similar locations, including nosing of steps .etc. where required, complete : 40 mm thick	750.00	Sqm	350.00	2,62,500.00	262.45	1,96,837.50
148	CONCRETE FLOORING Providing and laying 40 mm thick red oxide flooring, under layer of 30 mm thick cement concrete 1:2:4 and top layer of 10 mm thick plaster of cement red oxide mix (using 3.5 kg of red oxide of iron per 50 kg of cement) in cement mortar 1:3 with coarse sand finished with a floating coat of neat cement red oxide mix of same proportion, including cement slurry, nosing of steps etc., complete.	850.00	Sqm	500.00	4,25,000.00	475.60	4,04,260.00
149	CONCRETE FLOORING Add for making chequers in pattern on cement concrete floors, steps, landings, pavements, etc.	150.00	Sqm	200.00	30,000.00	27.30	4,095.00
150	Providing and laying red oxide plaster skirting (upto 300 mm height) with top layer of 6mm thick plaster of cement mortar red oxide mix, using 3.5 kg of red oxide of iron per 50 kg of cement in cement mortar 1:3 with coarse sand, finished with a floating coat of cement red oxide mix of same proportion, of total thickness : 21 mm, with under layer 15 mm thick cement plaster 1:3 with coarse sand	25.00	Sqm	250.00	6,250.00	252.25	6,306.25
	Terrazzo flooring						
151	Providing and laying in situ terrazzo floor in pattern and profile under layer cement concrete 1:2:4 and top layer with colour marble chips in one or more shade laid in cement in proportion 1:2 (1 cement : 2 marble chips by volume), laid in panels /narrow strips (dividing strips to be placed in floor shall be paid separately), cured, rubbed, polished and finished, complete, for : 50 mm thick flooring with under layer 38 mm thick and top layer 12 mm thick : Floor pavings, window sills, copings Medium shade pigment with 50% white and 50% ordinary grey cement	250.00	Sqm	700.00	1,75,000.00	475.60	1,18,900.00
	Stone flooring						
152	Providing and laying colour sand stone slab flooring, laid in patterns and profiles on a bed of 25 mm average thick cement mortar 1:4 (with coarse sand) to make up a total thickness of 50 mm, including laying slabs in cement slurry, pigmented to match the shade of slabs, grinding, rubbing and polishing complete : 25 mm thick: Grey Kotah stone	50.00	Sqm	600.00	30,000.00	928.79	46,439.50
153	Providing and laying colour sand stone slab flooring, laid in patterns and profiles on a bed of 25 mm average thick cement mortar 1:4 (with coarse sand) to make up a total thickness of 50 mm, including laying slabs in cement slurry, pigmented to match the shade of slabs, grinding, rubbing and polishing complete : 25 mm thick: Black Cuddapa stone	10.00	Sqm	600.00	6,000.00	880.58	8,805.80

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
131	Providing and fixing Mangalore tiles of size 400 x 240 mm, so as to cover an area of 320 x 210 mm, the lap should be not less than 75 mm.	200.00	Sqm	210.00	1,82,000.00	648.70	1,29,740.00
132	Fixing mangalore tiles of size 400x240mm so as to cover an area of 320x210mm. The lap should be not less than 75mm. Provide for necessary mortar jointing, chasing in walls, tile cutting, tile wastage etc.	2500.00	Sqm	350.00	8,75,000.00	525.97	13,14,925.00
133	Providing and fixing ridge tile and 3 way connector including necessary jointing	115.00	Rm	225.00	25,875.00	240.53	27,660.95
Doors and Windows							
Wooden frames							
134	Providing, fabricating and fixing in position selected quality seasoned & chemically treated wood work in frames and sub frames of doors, windows, clerestory windows and other frames, wrought to size & profile with mitred joints, including fixing to supports with threaded expansion bolts / hold fasts or other fixing accessories, complete : 2nd class CP teak wood	2.50	Cum	170000.00	4,25,000.00	138654.17	3,46,635.43
Finishes							
Gypsum plaster							
135	Providing and applying plaster of paris 10 mm thick (gypsum anhydrous)	300.00	Sqm	195.00	58,500.00	99.70	29,910.00
Cement plaster							
136	Providing 10 mm thick average plaster to soffits and sides of slabs, beams and other concrete surfaces, etc., in cement mortar 1:4 with fine sand, applied, finished smooth and cured, complete.	200.00	Sqm	265.00	53,000.00	128.90	25,780.00
137	Providing 12 mm thick average cement plaster to walls, columns, piers, etc., applied, finished smooth and cured, complete, with mixes : 1:6 with fine sand	150.00	Sqm	215.00	32,250.00	138.45	20,767.50
138	Providing 12 mm thick average cement plaster to walls, columns, piers, etc., applied, finished smooth and cured, complete, with mixes : 1:6 with coarse sand	180.00	Sqm	236.00	42,480.00	138.45	24,921.00
139	Providing 20 mm thick cement plaster in two coats, under layer 12mm thick cement plaster 1:6 with coarse sand and top layer 8 mm thick cement plaster 1:4 with coarse sand, finished rough with sponge and cured complete including providing grooves on top layer. The size of panel shall not exceed 2 sqm.	250.00	Sqm	350.00	87,500.00	185.50	46,375.00
140	Forming 15 mm deep grooves of uniform size in the top layer of washed stone grit plaster in pattern using wooden battens/aluminium channels, nailed to the under layer including removal of wooden battens/aluminium channels, repair to the edges of panels and finishing the groove complete in cement mortar 1:2 (1 cement : 2 silica sand) admixed with colour pigment, of groove widths : 10 mm	160.00	m	50.00	8,000.00	50.00	8,000.00
Ceiling, wall acoustical tiles							
141	Providing and fixing ceiling tiles / boards in steel / aluminium / wooden frame work, including filling joints with joint fillers, jointing compounds, tapes, papers, painting of edges of tiles/boards, with two coats of primer, necessary screws where required etc., complete (frame work will be paid for separately), of sizes : 12.5 mm thick Plaster of paris (gypsum anhydrous) ceiling tiles.	625.00	Sqm	280.00	1,87,500.00	498.87	3,11,793.75
142	do - do gypsum board 12mm thick.	180.00	Sqm	500.00	90,000.00	712.30	1,28,214.00

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
121	Providing, fabricating and erecting MS welded built up sections/ frames and applying a primer coat of zinc chromate on duly prepared surfaces, complete : In stringers, treads, landings, etc. of staircases including chequered plates wherever required, all complete.	200.00	Kg	130.00	26,000.00	69.45	13,890.00
	Bird Mesh						
122	Refabricating with existing framework with additional rod welded support and spreading GI welded metal mesh over the frames to shape and size and installing the fabricated units in place between RC fins without gaps.	375.00	Kg	125.00	46,875.00	69.45	26,043.75
	Wood work						
	Wood Framing						
123	Providing, fabricating and erecting MS welded built up sections/ frames and applying a primer coat of zinc chromate on duly prepared surfaces, complete : In guard bars, ladders, railings, and similar works.	180.00	Kg	90.00	16,200.00	81.45	14,661.00
124	Providing, fabricating and fixing in position selected quality seasoned and chemically treated wood work in frames of false ceilings, partitions, etc., complete : 2nd class Deodar wood.	6.50	Cum	110000.00	7,15,000.00	65292.48	4,24,401.12
125	Providing and fixing wooden frame with 50 mm x 50 mm battens, fixed at 600 mm centre to centre (both ways). Allow for solignum treatment to the timber framework : 2nd class CP teak Wood	225.00	Sqm	35000.00	7,87,500.00	3449.25	7,76,081.25
	Roof Truss						
126	Providing, fabricating and fixing in position selected quality seasoned and chemically treated wrought wood work in trusses, rafters, runners, posts, struts, wall plates, etc of size and profile in inclined roofs including anchoring to concrete members with holding down bolts, fixing accessories and all incidental works complete. 2nd class CP teakwood	20.00	Cum	1500000.00	30,00,000.00	138654.17	27,73,083.40
	Rails and Balusters						
127	Providing and fixing wooden hand rail made out of 55 mm x 75 mm timber and fixed to existing MS plate with S/S screws ,etc. complete : 1st class Burma teak wood	110.00	m	15000.00	1,65,000.00	556.40	61,204.00
	Damp & Waterproofing, Thermal protection						
	Damp proof course						
128	Providing and laying damp-proof course with cement concrete 1:2:4 with graded stone aggregate 12.5 mm nominal size, including side shuttering, compacting etc., complete. 40 mm thick	70.00	Sqm	300.00	21,000.00	194.85	13,639.50
	Wall and ceiling insulation						
129	Providing and placing in position over/on vapour barrier and such locations, insulation slab of approved manufacturers, abutting each other closely, including cutting to required sizes/profiles and all incidental work, complete, including applying a bonding base of a coat of blown bitumen @ 1.0 kg/sqm, glass wool/mineral wool/rock wool shall be packed in 100 micron low density polythene film, duly sealed from all sides (frame work shall be paid for separately) : 50 mm thick, fibre-glass (24kg per cum)	625.00	Sqm	5000.00	3,12,500.00	406.10	2,53,812.50
130	WALL OR CEILING INSULATION Add for wrapping glass wool/mineral wool/rock wool in 0.1 mm thick aluminum foil instead of 100 microns thick low density polythene film.	625.00	Sqm	250.00	1,56,250.00	198.15	1,23,843.75
	Roof tiles						

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
111	Providing brick work with bricks of class 75, joints finished flush/raked to 12 mm depth, cured including necessary scaffolding complete in cement mortar 1:6 with coarse sand, in : Superstructures upto 20.0 m above plinth level.	125.00	Cum	4400.00	5,50,000.00	3972.75	4,96,593.75
112	Providing brick work with bricks of class 75, joints finished flush/raked to 12 mm depth, cured including necessary scaffolding complete in cement mortar 1:6 with coarse sand, in : Basement, under ground water tank and the like, upto 7.0 m below GL.	30.00	Cum	4250.00	1,27,500.00	3450.75	1,03,522.50
113	Add for cutting or chamfering the bricks to required shape in masonry work	120.00	m	400.00	48,000.00	46.46	5,575.20
114	Providing and making mouldings, cornices & corbels with bricks of class 75 in cement mortar 1:4 with coarse sand (girth to be measured in mm and length in running metres)	350.00	100 mm/m	350.00	1,22,500.00	367.00	1,28,450.00
115	Providing brick work with bricks of class 75 in half brick thick walls in any shape and profile including curvilinear, laid in cement mortar 1:4 with coarse sand, joints finished flush/raked to 12 mm depth, cured, including scaffolding and flat reinforcement (25 x 3 mm) at every fourth course and embedding the same in adjoining masonry/columns by drilling holes etc complete : Super structure upto 20.0 m above plinth level.	125.00	Sqm	680.00	85,000.00	544.70	68,087.50
Random rubble masonry							
116	Providing random rubble masonry with hard stone with sides of stones, hammer dressed to achieve minimum thicknesses of joints and laid in cement mortar 1:6 with coarse sand, with joints not more than 15 mm thick, joints finished flush/raked to minimum 10 mm depth including necessary scaffolding, complete. Allow for levelling with cement concrete 1:6:12 with coarse sand at plinth/window sill/ceiling level and the like, in : Foundations and plinths, (1.5 m below and upto 1.2 above GL)	75.00	Cum	2600.00	1,95,000.00	2817.50	2,11,312.50
117	Providing random rubble masonry with hard stone with sides of stones, hammer dressed to achieve minimum thicknesses of joints and laid in cement mortar 1:6 with coarse sand, with joints not more than 15 mm thick, joints finished flush/raked to minimum 10 mm depth including necessary scaffolding, complete. Allow for levelling with cement concrete 1:6:12 with coarse sand at plinth/window sill/ceiling level and the like, in : Superstructures, upto 20.0 m above plinth level	45.00	Cum	2950.00	1,32,750.00	3355.15	1,50,981.75
118	Providing random rubble masonry with hard stone with sides of stones, hammer dressed to achieve minimum thicknesses of joints and laid in cement mortar 1:6 with coarse sand, with joints not more than 15 mm thick, joints finished flush/raked to minimum 10 mm depth including necessary scaffolding, complete. Allow for levelling with cement concrete 1:6:12 with coarse sand at plinth/window sill/ceiling level and the like, in : Basements and the like upto 7.0 m below GL	170.00	Cum	2750.00	4,67,500.00	2817.50	4,78,975.00
Metal work							
Structural steel							
119	BUILT UP SECTION Providing, fabricating and erecting bolted structural steel built up sections, trusses and frames and applying a primer coat of zinc chromate on duly prepared surfaces, complete.	2500.00	Kg	112.00	2,80,000.00	81.45	2,03,625.00
120	BUILT UP SECTION Providing and applying three finish coats of synthetic enamel paint on steel surfaces, complete.	225.00	Sqm	110.00	24,750.00	86.75	19,518.75
Steel stair							

(Job)

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
103	Providing and laying cement concrete with fine sand and graded stone aggregate, 40 mm nominal size in foundations, footings and under floors including side forms, curing etc., complete, of nominal mix : 1:3:6	15.00	Cum	3700.00	55,500.00	3401.30	51,019.50
104	Providing and laying plain cement concrete 1:3:6 with coarse sand, laid to required thickness (not exceeding 50mm) and slopes, in roof screedings, floor screedings and similar locations, laid in panels not exceeding 4 sqm., consolidated, finished fair and cured complete : Floor screedings	57.00	Cum	3700.00	2,10,900.00	3401.30	1,93,874.10
Structural Concrete - RCC							
105	Providing and laying in position, specified mix of RCC, including compaction and curing complete but excluding centring, shuttering and reinforcement, 1:2:4 nominal mix : In foundation and plinth (1.5 m below and upto 1.2 m above G.L.)	28.00	Cum	4500.00	1,26,000.00	4190.95	1,17,346.60
106	Providing and laying in position, specified mix of RCC, including compaction and curing complete but excluding centring, shuttering and reinforcement, 1:2:4 nominal mix : From plinth level to 7.0 m below GL in basement	5.00	Cum	4700.00	23,500.00	4190.95	20,954.75
107	Providing and laying in position, specified mix of RCC, including compaction and curing complete but excluding centring, shuttering and reinforcement, 1:2:4 nominal mix : From plinth level upto 20.0 m above in superstructure	125.00	Cum	4850.00	6,06,250.00	4727.80	5,90,975.00
Lime Concrete							
108	Providing and laying lime concrete as per IS 2541 with 40% mortar comprising of 1 lime putty : 1 surkhi : 1 fine sand and 100% graded brick aggregate 40 mm nominal size in foundations, footings and under floor including side forms, complete.	12.00	Cum	3000.00	36,000.00	4074.20	48,890.40
Precast - Fins/louvers							
109	Providing and fixing precast cement concrete in vertical and horizontal fins individually or forming boxes and for louvers and similar, cast, cured, hoisted and fixed in position, setting in cement mortar 1:3 with coarse sand, along with required formwork and finishing smooth and all fixing arrangements complete but excluding the cost of reinforcement. Allow for stacking, curing and handling at all levels above/below GL.	33.50	Cum	10000.00	3,35,000.00	5325.80	1,78,414.30
Masonry - Brickwork, conventional bricks							
110	Providing brick work with bricks of class 75, joints finished flush/raked to 12 mm depth, cured including necessary scaffolding complete in cement mortar 1:6 with coarse sand, in : Foundations and plinths (1.5 m below and upto 1.2 m above GL)	85.00	Cum	4250.00	3,61,250.00	3450.75	2,93,313.75

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
94	Providing and fixing hard wood, planed plank shuttering, tongued and grooved, for exposed concrete surfaces, including strutting, propping, bracing, bolting, wedging, casing, striking, removal etc. complete. Allow for forming drips, throats, grooves, chamfers, cut-outs, openings etc. where called for and for dressing with approved shuttering oil to prevent adhesion. The works are at all levels. The floor height is up to 4.00 m : Sides of columns, piers of any shape, size and profile.	10.00	Sqm	300.00	3,000.00	354.85	3,548.50
95	Providing and fixing hard wood, planed plank shuttering, tongued and grooved, for exposed concrete surfaces, including strutting, propping, bracing, bolting, wedging, casing, striking, removal etc. complete. Allow for forming drips, throats, grooves, chamfers, cut-outs, openings etc. where called for and for dressing with approved shuttering oil to prevent adhesion. The works are at all levels. The floor height is up to 4.00 m : Soffits and sides of beams, plinth beams, lintels, ties, ribs, pergolas and such other, string courses, cornices, corbels.	10.00	Sqm	202.35	3,000.00	262.35	2,623.50
96	Providing and fixing hard wood, planed plank shuttering, tongued and grooved, for exposed concrete surfaces, including strutting, propping, bracing, bolting, wedging, casing, striking, removal etc. complete. Allow for forming drips, throats, grooves, chamfers, cut-outs, openings etc. where called for and for dressing with approved shuttering oil to prevent adhesion. The works are at all levels. The floor height is up to 4.00 m : Soffits and sides of suspended slabs, floor and roof projections, landing slabs, canopies, chajjas, slabs of planting boxes and such other horizontal elements, coffer ribs and slabs.	20.00	Sqm	400.00	8,000.00	316.50	6,330.00
97	Providing and fixing hard wood, planed plank shuttering, tongued and grooved, for exposed concrete surfaces, including strutting, propping, bracing, bolting, wedging, casing, striking, removal etc. complete. Allow for forming drips, throats, grooves, chamfers, cut-outs, openings etc. where called for and for dressing with approved shuttering oil to prevent adhesion. The works are at all levels. The floor height is up to 4.00 m : Soffits and sides of waist slabs of stairs, sides of risers and stepped waist slabs, spiral staircases, etc.	8.00	Sqm	400.00	3,200.00	316.50	2,532.00
Inserts							
98	Providing and fixing wedge expansion type hold / dash fasteners on CC / RCC surface backing including drilling necessary holes and the cost of bolts etc., complete : Fastener with threaded dia. 6 mm	800.00	each	50.00	40,000.00	27.50	22,000.00
99	Providing and fixing wedge expansion type hold / dash fasteners on CC / RCC surface backing including drilling necessary holes and the cost of bolts etc., complete : Fastener with threaded dia. 10 mm	150.00	each	75.00	11,250.00	33.30	4,995.00
Reinforcement steel							
100	Providing and laying in position TMT (Thermo Mechanically Treated) bar reinforcement in all reinforced concrete works including straightening, cutting, bending, binding with 18 gauge annealed steel wire, complete, of grade : Fe 415	15.00	Tonne	551900.00	8,25,000.00	53850.00	8,07,750.00
Plain cement concrete							
101	Providing and laying cement concrete with coarse sand and graded stone aggregate, 40 mm nominal size in foundations, footings and under floors including side forms curring etc., complete, of nominal mix : 1:4:8	40.00	Cum	35000.00	1,40,000.00	3145.75	1,25,830.00
102	Providing and laying cement concrete with fine sand and graded stone aggregate, 40 mm nominal size in foundations, footings and under floors including side forms, curring etc., complete, of nominal mix : 1:4:8	18.00	Cum	3500.00	63,000.00	3145.75	56,623.50

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
	Drains						
85	Constructing 300 mm inside drain width with 230 mm thick brickwork with bricks of class 75 in cement mortar 1:4 with coarse sand over raft or CC base, 25 mm thick CC 1:2:4 at bottom and in filling haunches including 12 mm thick cement plaster 1:3 with coarse sand finished with floating coat of neat cement inside and on exposed surface for drain of average depth : 100 mm	25.00	m	2100.00	52,500.00	873.82	21,845.50
86	Constructing 300 mm inside drain width with 230 mm thick brickwork with bricks of class 75 in cement mortar 1:4 with coarse sand over raft or CC base, 25 mm thick CC 1:2:4 at bottom and in filling haunches including 12 mm thick cement plaster 1:3 with coarse sand finished with floating coat of neat cement inside and on exposed surface for drain of average depth : 300 mm	15.00	m	2750.00	41,250.00	1296.46	19,446.90
87	Providing and fixing MS gratings in lengths of 600 to 1000 mm, fabricated with angle frames and flats at 25 mm centres, Angle 50 x 50 x 5 mm and flat 45 x 5 mm	15.00	Sqm	3000.00	45,000.00	3486.28	52,294.20
	Waterbound Macadam - Subgrade						
88	Preparation of subgrade by excavating or filling with available earth to an average of 225 mm depth, dressing to camber, watering and consolidating with road roller of 8-10 t capacity including making good the undulations etc. and disposal of surplus earth / bringing earth from borrow pits within a lead of 50 m, complete.	15.00	100 sm	5500.00	82,500.00	55.95	839.25
89	Consolidation of sub-grade with road roller of 8 to 10t capacity including making good the undulations, etc.with earth or quarry spoils, etc. and rerolling the sub-grade, complete.	15.00	100 sm	3000.00	45,000.00	337.40	5,061.00
90	Add for compaction of earth work in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	10.00	100 cm	2000.00	20,000.00	8.15	81.50
	Kerbs & Gutters						
91	Providing and laying M-20 grade precast concrete kerb stones including setting in cement mortar 1:4 with coarse sand and pointing of joints with same mortars, etc. complete of size : 300 x 300 x 150 mm thick	160.00	m	450.00	72,000.00	363.29	58,126.40
	Concrete Formwork and Accessories						
	Form Work/Centering and shuttering						
	Forms in Place						
92	Providing and fixing centering and shuttering for concrete work (plain and reinforced) in following locations, including strutting, propping, bracing, bolting tie bolt / spring coil / plastic cone, wedging, casing, striking, removal etc, complete. Allow for forming grooves, drips, throats, chamfers, cut-outs, openings etc. where called for and for dressing with approved shuttering oil to prevent adhesion. The works are at all levels. The floor height is up to 4.00 m : Sides of footings of columns and walls and sides of base slabs.	35.00	Sqm	300.00	10,500.00	166.05	5,811.75
93	Providing and fixing centering and shuttering for concrete work (plain and reinforced) in following locations, including strutting, propping, bracing, bolting tie bolt / spring coil / plastic cone, wedging, casing, striking, removal etc, complete. Allow for forming grooves, drips, throats, chamfers, cut-outs, openings etc. where called for and for dressing with approved shuttering oil to prevent adhesion. The works are at all levels. The floor height is up to 4.00 m : Foundation beams, floor channels, kerb stones and drain walls.	18.00	Sqm	300.00	5,400.00	166.05	2,988.90

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SNo	Description	Executed Quantity	Unit	M/s:Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
75	Constructing road gully chambers 450 x 450 x 775 mm deep inside, in one brick thick brick work with bricks of class 75 in cement mortar 1:5 with fine sand, including fixing 450 x 100mm vertical grating, top RCC slab 75 mm thick in 1:2:4 mix, foundation concrete 150 mm thick in 1:5:10, with coarse sand, inside plaster 12 mm thick with cement mortar 1:3 finished with a floating coat of neat cement, excavation and back filling, complete, with : CI gratings weighing 15.0 kg	12.00	each	6500.00	78,000.00	3401.10	40,813.20
76	910 mm inside dia. at bottom, 560 mm inside dia. at top, 910 mm deep inside, and foundation concrete 225 mm thick	5.00	each	0.00	0.00	0.00	0.00
77	Constructing circular type manhole with class 75 bricks in cement mortar 1:4 with coarse sand, inside plaster 12 mm thick with cement mortar 1:3 with coarse sand, finished with a floating coat of neat cement, foundation concrete 1:3:6 with coarse sand, 150 mm thick cement concrete 1:2:4 on top of masonry including centering, shuttering, making necessary channel in 150 mm thick cement concrete 1:2:4 finished with a floating coat of neat cement, complete, but excluding cost of foot rest and outside plaster, excavation and back filling, complete, of internal size : Add for depth over 910 mm and upto 1670 mm for circular manhole 910 mm dia at bottom and 560 mm dia at top	3.00	m	19000.00	57,000.00	3567.30	10,701.90
78	Constructing manholes one brick thick with class 75 bricks in cement mortar 1:4 with coarse sand, RCC top slab 150 mm thick with cement concrete 1:2:4 with necessary reinforcement, foundation concrete, 200 mm thick with cement concrete 1:4:8 with coarse sand, 12 mm thick inside plaster with cement mortar 1:3 in coarse sand finished with a floating coat of neat cement, making channels with cement concrete 1:2:4, finished with a floating coat of neat cement, complete, but excluding cost of foot rests and outside plaster, excavation and back filling, complete, of internal size : 900 x 800 x 600 mm deep	12.00	each	12000.00	1,44,000.00	7959.84	95,518.08
79	Constructing manholes one brick thick with class 75 bricks in cement mortar 1:4 with coarse sand, RCC top slab 150 mm thick with cement concrete 1:2:4 with necessary reinforcement, foundation concrete, 200 mm thick with cement concrete 1:4:8 with coarse sand, 12 mm thick inside plaster with cement mortar 1:3 in coarse sand finished with a floating coat of neat cement, making channels with cement concrete 1:2:4, finished with a floating coat of neat cement, complete, but excluding cost of foot rests and outside plaster, excavation and back filling, complete, of internal size : 1200 x 900 x 900 mm deep	6.00	each	20000.00	1,20,000.00	10260.19	61,561.14
80	CATCH BASINS OR MANHOLES Add for depth of manholes of size 900 x 800 mm beyond 600 mm	8.00	m	6000.00	48,000.00	4153.60	33,228.80
81	CATCH BASINS OR MANHOLES Add for depth of manholes of size 1200 x 900 beyond 900 mm	6.00	m	8000.00	48,000.00	4975.60	29,853.60
82	Providing manhole covers with frames and fixing the same during laying of cement concrete / reinforced cement concrete 1:2:4 mix on top of brick work / in slab, complete, of shape and duty : SFRC conforming to IS:12592, Rectangular, Medium duty 600 x 600 mm (Grade designation MD 10)	15.00	each	2500.00	37,500.00	1134.25	17,013.75
83	CATCH BASINS OR MANHOLES Providing manhole covers with frames and fixing the same during laying of cement concrete / reinforced cement concrete 1:2:4 mix on top of brick work / in slab, complete, of shape and duty : Circular, Medium duty 500 mm dia. (Grade designation MD 10)	3.00	each	2000.00	6,000.00	913.60	2,740.80
84	Providing and fixing foot rests in manholes embedded in 230 x 200 x 100 mm cement concrete blocks 1:3:6 with coarse sand, complete, of: CI weight 4.5 kg	15.00	each	350.00	5,250.00	236.55	3,548.25

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
69	Providing and laying cement concrete 1:5:10 with coarse sand, 150 mm thick all around RCC/ SW pipes including bed concrete, necessary shuttering and curing, complete, for pipes of nominal dia.: 100 mm	10.00	m	270.00	2,700.00	435.30	4,353.00
70	Providing and laying cement concrete 1:5:10 with coarse sand, 150 mm thick all around RCC/ SW pipes including bed concrete, necessary shuttering and curing, complete, for pipes of nominal dia.: 150 mm	10.00	m	330.00	3,300.00	532.40	5,324.00
Septic tank							
71	Constructing septic tanks conforming to IS:2470 with brick work in cement mortar 1:4 with coarse sand. Top slab in RCC 1: 2:4 mix with necessary reinforcement, precast RCC baffle walls, 12 mm thick plaster inside with cement mortar 1:3 with coarse sand, finished with a floating coat of neat cement, flooring with cement concrete 1:2:4, laid to slope, of minimum thickness 100 mm, finished with 12 mm thick cement plaster 1:3 in coarse sand finished with a floating coat of neat cement, outside plaster 15 mm thick with cement mortar 1:5 in fine sand, cast iron tees of required size for inlet and outlet, CI vent pipes 50 mm dia. with mosquito proof nets, and 32 mm dia. brass wheel valves for removal of sludge, including SFRC manhole covers with frames, light duty, 600 x 450 mm size and plastic encapsuled MS foot rests at 300 mm intervals, complete, excluding excavation and refilling for : two year cleaning cycle for: 20 users	1.00	each	0.00	0.00	0.00	0.00
72	Constructing septic tanks conforming to IS:2470 with brick work in cement mortar 1:4 with coarse sand. Top slab in RCC 1: 2:4 mix with necessary reinforcement, precast RCC baffle walls, 12 mm thick plaster inside with cement mortar 1:3 with coarse sand, finished with a floating coat of neat cement, flooring with cement concrete 1:2:4, laid to slope, of minimum thickness 100 mm, finished with 12 mm thick cement plaster 1:3 in coarse sand finished with a floating coat of neat cement, outside plaster 15 mm thick with cement mortar 1:5 in fine sand, cast iron tees of required size for inlet and outlet, CI vent pipes 50 mm dia. with mosquito proof nets, and 32 mm dia. brass wheel valves for removal of sludge, including SFRC manhole covers with frames, light duty, 600 x 450 mm size and plastic encapsuled MS foot rests at 300 mm intervals, complete, excluding excavation and refilling for : two year cleaning cycle for: 50 users	1.00	each	0.00	0.00	0.00	0.00
73	Constructing soak pits 2500 mm dia., 3000 mm deep with 450 x 450 mm dry brick honey comb shaft with class 75 bricks, shaft top covered with RCC slab in cement concrete mix 1:2:4, 100 mm thick with reinforcement, portion between honey comb shaft and outer wall, filled with brick bats and brick ballast, covered at the top with 25mm thick stone slabs & earth, SW drain pipes 100 mm dia., 1800 mm long including excavation and disposal of surplus earth in authorized dumps, complete.	8.00	each	200,000.00	1,600,000.00	15363.25	1,22,906.00
Catch basins or Manholes							
74	Constructing road gully chambers 450 x 500 x 600 mm deep inside, in one brick thick brick work with bricks of class 75 in cement mortar 1:5 in fine sand, including fixing horizontal grating with frame of size 450 x 500 mm in 150 mm thick cement concrete 1:2:4, foundation concrete 1:5:10, with coarse sand 150 mm thick, inside plaster 12 mm thick with cement mortar 1:3, finished with a floating coat of neat cement, excavation and back filling, complete, with : CI gratings weighing 90 kg.	30.00	each	5000.00	1,50,000.00	2913.15	87,394.50

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
60	Providing, fixing and testing wafer type CI butterfly valves, conforming to IS:13095, PN 1.6, MS hand lever operated with galvanised steel fasteners and 3 mm thick compressed neoprene gaskets, complete, of nominal size : 100 mm	4.00	each	3500.00	14,000.00	3246.00	12,984.00
61	Providing, laying, jointing and testing UPVC pipes, conforming to IS:4985 (6.0 kg/sq.cm.), including injection moulded fittings with bosses e.g. tees, bends, couplings, adapters, etc., and jointing with solvent weld joints, complete, excluding trenching and back filling, of outer dia.: 40 mm	60.00	m	200.00	12,000.00	221.56	13,293.60
62	Providing, laying, jointing and testing UPVC pipes, conforming to IS:4985 (6.0 kg/sq.cm.), including injection moulded fittings with bosses e.g. tees, bends, couplings, adapters, etc., and jointing with solvent weld joints, complete, excluding trenching and back filling, of outer dia.: 50 mm	40.00	m	225.00	9,000.00	247.92	9,916.80
63	Providing, laying, jointing and testing UPVC pipes, conforming to IS:4985 (6.0 kg/sq.cm.), including injection moulded fittings with bosses e.g. tees, bends, couplings, adapters, etc., and jointing with solvent weld joints, complete, excluding trenching and back filling, of outer dia.: 63 mm	25.00	m	260.00	6,500.00	265.35	6,633.75
64	Providing, laying, jointing and testing UPVC pipes, conforming to IS:4985 (6.0 kg/sq.cm.), including injection moulded fittings with bosses e.g. tees, bends, couplings, adapters, etc., and jointing with solvent weld joints, complete, excluding trenching and back filling, of outer dia.: 90 mm	10.00	m	350.00	3,500.00	323.42	3,234.20
Chamber, Brick masonry							
65	Constructing brick masonry chambers with class 75 bricks in cement mortar 1:5 with fine sand, RCC top slab 1:2:4 of avg. thickness 150 mm, including reinforcement, excavation, refilling, 100 mm thick foundation concrete 1:5:10 with coarse sand, 12 mm thick inside plastering with cement mortar 1:3 with coarse sand, finished with a floating coat of neat cement, and 15 mm thick outside plastering in cement mortar 1:4 with fine sand, complete with one brick thick wall, of size : 600 x 600 x 750 mm deep inside, with CI surface box 100 mm top dia., 160 mm bottom dia. and 180 mm deep inside, with chained lid.	15.00	each	9000.00	1,35,000.00	5096.55	76,448.25
66	Constructing brick masonry chambers with class 75 bricks in cement mortar 1:5 with fine sand, RCC top slab 1:2:4 of avg. thickness 150 mm, including reinforcement, excavation, refilling, 100 mm thick foundation concrete 1:5:10 with coarse sand, 12 mm thick inside plastering with cement mortar 1:3 with coarse sand, finished with a floating coat of neat cement, and 15 mm thick outside plastering in cement mortar 1:4 with fine sand, complete with one brick thick wall, of size : 600 x 600 x 750 mm deep inside, with CI surface box 350 x 350 mm and 165 mm deep inside, with chained lid, for fire hydrant.	15.00	each	10000.00	1,50,000.00	4773.05	71,595.75
Piping - Drainage & Sewerage							
67	Providing, laying, jointing and testing of glazed stone ware pipes, conforming to IS:651 grade A, and jointing with cement mortar 1:1 with fine sand and tarred gasket of hemp yarn soaked in thick cement slurry, complete, excluding trenching and back filling, of nominal dia.: 100 mm	50.00	m	310.00	15,500.00	226.05	11,302.50
68	Providing, laying, jointing and testing of glazed stone ware pipes, conforming to IS:651 grade A, and jointing with cement mortar 1:1 with fine sand and tarred gasket of hemp yarn soaked in thick cement slurry, complete, excluding trenching and back filling, of nominal dia.: 150 mm	20.00	m	400.00	8,000.00	301.35	6,027.00

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
52	Earth work in excavation, in trenches, in all types of soil, for pipes, cables, etc. including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m including getting out the excavated earth and then returning the soil as required, in layers not exceeding 200 mm in depth including consolidating each deposited layer by ramming, watering etc. and disposing of surplus excavated soil as directed, within a lead of 50 m complete, of pipes, cables of sizes : upto 80 mm dia. (minimum width of trench 450 mm)	230.00	m	150.00	34,500.00	98.10	22,563.00
53	Earth work in excavation, in trenches, in all types of soil, for pipes, cables, etc. including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m including getting out the excavated earth and then returning the soil as required, in layers not exceeding 200 mm in depth including consolidating each deposited layer by ramming, watering etc. and disposing of surplus excavated soil as directed, within a lead of 50 m complete, of pipes, cables of sizes : over 80 mm dia. and upto 300 mm dia. (minimum width of trench 600 mm)	120.00	m	200.00	24,000.00	160.25	19,230.00
54	Earth work in excavation, in trenches, in all types of soil, for pipes, cables, etc. including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m including getting out the excavated earth and then returning the soil as required, in layers not exceeding 200 mm in depth including consolidating each deposited layer by ramming, watering etc. and disposing of surplus excavated soil as directed, within a lead of 50 m complete, of pipes, cables of sizes : over 300 mm dia. (minimum width of trench 850 mm)	75.00	m	200.00	15,000.00	250.20	18,765.00
55	Excavation and Fill EXCAVATING, UTILITY TRENCH Excavating holes up to 0.5 cum including getting out the excavated material, then returning the soil as required in layers not exceeding 200 mm in depth, including consolidating each deposited layer by ramming, watering etc., disposing of surplus excavated material, as directed, within a lead of 50 m and lift upto 1.5 m, complete : All types of soil	80.00	each	200.00	16,000.00	41.85	3,348.00
Termite - Pre treatment							
56	Providing and injecting chemical emulsions for pre-construction anti-termite treatment and creating continuous chemical barrier under and all around the column pits, wall trenches, basement excavation, top surfaces of plinth filling, junctions of walls and floors, along the external perimeter of buildings, expansion joints, over the top surface of consolidated earth on which plinth protection is to be laid, surrounding of pipes and conduits etc. complete, in accordance with IS:6313 (Part II). (Plinth area of the building at ground level shall only be measured): Using Chloropyriphos Emulsifiable concentrate 0.2%.	1150.00	Sqm	60.00	69,000.00	93.65	1,07,697.50
Water Distribution							
57	Providing, laying, jointing and testing double flanged ductile iron pipes having screwed flanges, conforming to IS:8329, including compressed neoprene washers, galvanised steel fasteners, complete, excluding trenching and back filling, of nominal dia.: 80 mm	205.00	m	1000.00	2,05,000.00	655.14	1,34,303.70
58	Providing, laying, jointing and testing double flanged ductile iron pipes having screwed flanges, conforming to IS:8329, including compressed neoprene washers, galvanised steel fasteners, complete, excluding trenching and back filling, of nominal dia.: 100 mm	40.00	m	1200.00	48,000.00	713.40	28,536.00
59	Providing, fixing and testing wafer type CI butterfly valves, conforming to IS:13095, PN 1.6, MS hand lever operated with galvanised steel fasteners and 3 mm thick compressed neoprene gaskets, complete, of nominal size : 80 mm	5.00	each	1900.00	9,500.00	2363.27	11,816.35

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
41	Banking / Depositing all types of excavated earth in layers not exceeding 200 mm in thickness, breaking clods, watering, rolling each layer with power roller of minimum 8 ton capacity and dressing up to required profiles and levels, in embankment for roads, flood banks, marginal banks, mounds and guide banks etc. and compacting the deposited earth under optimum moisture content to give at least 95% of the maximum dry density, lead up to 50 m and lift up to 1.5 m, complete	325.00	Cum	140.00	45,500.00	169.10	54,957.50
42	Deduct for not rolling with power roller of minimum 8 ton capacity for banking excavated earth in layers not exceeding 200 mm in thickness.	160.00	Cum	35.00	5,600.00	3.05	-488.00
43	Deduct for not watering the excavated earth used in banking.	70.00	Cum	20.00	1,400.00	12.10	-847.00
44	Filling available excavated earth (excluding rock) in trenches, plinths, sides of foundations and in adjacent areas to profiles, shapes and levels etc. in layers not exceeding 200 mm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m, complete.	310.00	Cum	120.00	37,200.00	75.45	23,389.50
45	Supplying and stacking good earth, free from organics impurities.	825.00	Cum	350.00	2,88,750.00	309.74	2,55,535.50
Bulk Excavation							
46	Earth work in rough excavation, in all types of soil, banking excavated earth in layers not exceeding 200 mm in thickness, breaking clods, watering, rolling each layer with 1/2 ton roller, or compacting with wooden or steel rammers, and rolling every 3rd and top-most layer with power roller of minimum 8 ton capacity and dressing up, in embankment for roads, flood banks, marginal banks and guide banks or filling up ground depressions, lead up to 50 m and lift up to 1.5 m, complete.	110.00	Cum	250.00	27,500.00	276.50	30,415.00
47	Earth work in excavation over areas (exceeding 300 mm in depth, 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50 m and lift upto 1.5 m, disposed earth to be levelled and neatly dressed, complete: All types of soil	250.00	Cum	285.00	71,250.00	130.95	32,737.50
48	Add for every additional lift of 1.5 m or part thereof in: All types of	50.00	Cum	35.00	1,750.00	35.45	1,772.50
Fill							
49	Providing and laying 100 mm/150 mm thick (consolidated thickness) hard core fill, under floors, pavings and other locations, with approved hard stones of size 50 mm and down, thoroughly filled with smaller chips, rammed, rolled, watered and consolidated to required levels, complete.	880.00	Cum	1,200.00	10,56,000.00	965.54	8,49,675.20
50	Providing clean fine sand fill under floors, pavings and similar locations, laid to required depth, compacted by flooding with water, finished to proper levels, complete.	750.00	Cum	1,186.00	8,89,500.00	1282.70	9,62,025.00
Trench							
51	Earth work in excavation in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated earth as directed, within a lead of 50 m, complete : All types of soil	200.00	Cum	250.00	50,000.00	132.20	26,440.00
Utility Trench							

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
27	RAIN WATER PIPES DEMOLITION Dismantling CI / GS / PVC / asbestos exposed rain water pipes with fittings and clamps including stacking the serviceable material and disposal of unserviceable material within a 50 m lead, of dia: over 80 mm and upto 150 mm	45.00	m	40.00	1,800.00	20.50	922.50
28	Dismantling CI / GS / PVC / Asbestos rain water pipes embedded in concrete / brick work with fittings and clamps including dismantling of concrete/brick work etc., stacking the serviceable material and disposal of unserviceable materials up to 50 m lead, of dia: upto 80 mm	15.00	m	40.00	600.00	42.85	642.75
29	Dismantling CI / GS / PVC / Asbestos rain water pipes embedded in concrete / brick work with fittings and clamps including dismantling of concrete/brick work etc., stacking the serviceable material and disposal of unserviceable materials up to 50 m lead, of dia: over 150 mm	15.00	m	50.00	750.00	103.15	1,547.25
Clear and Grub							
30	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 300 mm (measured at a height of 1.0 m above GL) and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared, complete.	50.00	100 sm	1000.00	50,000.00	463.45	23,172.50
31	Felling trees including cutting of trunks and branches, removing the roots, stacking of serviceable materials and disposal of unserviceable materials within a 50 m lead, complete, of girths (measured at a height of 1.0 m above GL): over 300 mm and upto 600 mm	40.00	each	500.00	20,000.00	142.75	5,710.00
32	Felling trees including cutting of trunks and branches, removing the roots, stacking of serviceable materials and disposal of unserviceable materials within a 50 m lead, complete, of girths (measured at a height of 1.0 m above GL): over 600 mm and upto 1200 mm	12.00	each	1000.00	12,000.00	631.80	7,581.60
33	Clearing grass and removal of the rubbish upto a distance of 50 m outside the periphery of the area cleared, complete.	20.00	100 sm	1100.00	22,000.00	239.65	4,793.00
34	Surface dressing of the ground including removing vegetation and inequalities not exceeding 150 mm deep, in all types of soil and disposal of rubbish upto a lead of 50 m, complete.	60.00	100 sm	1100.00	66,000.00	894.20	53,652.00
Dewatering							
35	Pumping out water caused by spring, tidal or river seepage, broken water mains or drains and the like.	30.00	Kltr	200.00	6,000.00	318.05	9,541.50
Excavation - Close and open timbering							
36	Providing and fixing close timbering including strutting, shoring and packing cavities (wherever required) complete (Measurement to be taken of the face area timbered), Depth not exceeding 1.5 m : in trenches etc.	35.00	Sqm	30.00	1,050.00	104.00	3,640.00
37	Providing and fixing close timbering including strutting, shoring and packing cavities (wherever required) complete (Measurement to be taken of the face area timbered), Depth not exceeding 1.5 m : in shafts, wells, cesspits, manholes and the like	40.00	Sqm	30.00	1,200.00	104.00	4,160.00
38	Add for every 1 m or part thereof of additional depth over an initial depth of 1.5 m, for close timbering : in trenches etc.	30.00	Sqm	40.00	1,200.00	109.40	3,282.00
39	Add for every 1 m or part thereof of additional depth over an initial depth of 1.5 m, for close timbering : in shafts, wells, cesspits, man-holes and the like	10.00	Sqm	40.00	400.00	129.45	1,294.50
Topsoil							
40	Earth work in surface excavation not exceeding 300 mm in depth but exceeding 1.5 m in width as well as 10 sqm on plan, in all types of soil including disposal of excavated earth up to 50 m and lift up to 1.5 m, disposed soil to be leveled and neatly dressed, complete.	225.00	100 sm	2100.00	4,72,500.00	3589.05	8,075.36
Back fill							

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
13	Demolishing RB work in foundations, super structure and basement, at all heights / depths, including cutting, straightening scrapping, cleaning and stacking of reinforcement bars and disposal of unserviceable materials upto a 50 m lead.	15.00	Cum	1200.00	18,000.00	848.00	12,720.00
14	Dismantling / Demolishing brick work in cement / lime mortar in foundations, super structure and basement, at all heights / depths, including removing of mortar, cleaning bricks and stacking of serviceable materials and disposed of unserviceable materials upto 50 m lead	82.00	Cum	1200.00	98,400.00	536.60	44,001.20
15	Dismantling / demolishing stone rubble masonry in cement / lime mortar in foundations, super structure and basement at all heights / depths including stacking of serviceable materials and disposal of unserviceable materials upto a 50 m lead.	67.00	Cum	1300.00	87,100.00	641.65	42,990.55
Ceiling Demolition							
16	Dismantling false ceiling, partitions, wall lining, etc supported / fixed to wooden / aluminium / metal frame including dismantling of frame, stacking of serviceable material and disposal of unserviceable material upto a 50 m lead, with : Wooden planks	10.00	Sqm	275.00	2,750.00	17.15	171.50
Door /window demolition							
17	Taking out door, window and clerestory window shutters (metal or wood) including chowkhats, architrave, holdfast, etc. complete and stacking within a 50 m lead, of areas: upto 3 sqm	34.00	each	750.00	25,500.00	42.95	1,460.30
18	Taking out door, window and clerestory window shutters (metal or wood) including chowkhats, architrave, holdfast, etc. complete and stacking within a 50 m lead, of areas: over 3 sqm	4.00	each	1000.00	4,000.00	56.95	227.80
19	Dismantling expanded metal or IRC fabrics along with battens and beadings including stacking the serviceable materials within a 50 m lead.	375.00	Sqm	215.00	80,625.00	21.05	7,893.75
Flooring demolition							
20	Dismantling tile work in floors and roofs in cement mortar/lime mortar including stacking of serviceable material and disposal of unserviceable material upto a lead of 50 m, of thickness : 10 mm to 25 mm	900.00	Sqm	225.00	2,02,500.00	22.12	19,908.00
21	Dismantling tile work in floors and roofs in cement mortar/lime mortar including stacking of serviceable material and disposal of unserviceable material upto a lead of 50 m, of thickness : over 25 mm and upto 40 mm	450.00	Sqm	250.00	1,12,500.00	35.65	16,042.50
22	Dismantling dry brick pitching in floors, drains etc, including stacking of serviceable materials and disposal of unserviceable materials within a 50 m lead.	75.00	Sqm	200.00	15,000.00	326.80	24,510.00
Framing demolition							
23	Dismantling woodwork in frames, trusses, purlins and rafters upto a 10 metres span and 5 metres height including stacking the material within a 50 m lead, of sectional areas : upto 4000 sqmm	50.00	m	800.00	40,000.00	1357.65	67,882.50
24	Dismantling steel work in built up sections at all heights and depths, in angles, tees, flats, channels and tubes including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50 m lead.	20.00	Qtl	50000.00	1,00,000.00	65.00	1,300.00
Partitions Demolition							
25	Dismantling aluminum partitions, doors, windows, fixed glazing and false ceiling and gypsum partitions / false ceiling including stacking of serviceable materials and disposal of unserviceable materials upto a 50 m lead.	100.00	Sqm	200.00	20,000.00	17.15	1,715.00
Rain water Pipes demolition							
26	Dismantling CI / GS / PVC / asbestos exposed rain water pipes with fittings and clamps including stacking the serviceable material and disposal of unserviceable material within a 50 m lead, of dia: upto 80 mm	30.00	m	20.00	600.00	19.60	588.00

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SNo	Description	Executed Quantity	Unit	M/s.Chennai Engineers - Chennai 600 099		CPWD Rate rate *	
				Rate / unit	Total amount	Rate / unit	Total amount
SITE PREPARATION							
Site Demolition							
External services							
1	Dismantling old CI pipes including excavation, removal of pipes, refilling trenches, breaking lead caulked joints, melting of lead and making lead blocks, stacking and handing over to owner pipes & lead at site, and disposal of unserviceable materials within a lead of 50 m, complete, of nominal di : 80 mm	80.00	m	35.00	2,800.00	127.45	10,196.00
2	Dismantling of manholes including RCC top slabs, CI/SFRC covers with frames, including stacking of useful materials and disposal of unserviceable materials within a lead of 50 m, complete, of shape and size : Rectangular, 900 x 800 x 450 mm deep	12.00	each	750.00	9,000.00	679.75	8,157.00
3	Add for dismantling additional depth of : Circular manholes, 1220 mm dia., for depth beyond 1680 mm	5.00	m	1500.00	7,500.00	580.65	2,903.25
4	Add for dismantling additional depth of : Rectangular manholes, 900 x 800 mm, for depth beyond 450 mm	5.00	m	1000.00	5,000.00	534.20	2,671.00
5	Add for dismantling additional depth of : Rectangular manholes, 1200 x 900 mm, for depth beyond 900 mm	5.00	m	1000.00	5,000.00	636.20	3,181.00
6	Dismantling galvanised steel pipes (external work) including excavation and refilling trenches after taking out the pipes, including stacking of pipes within a 50 m lead, of nominal bores: 15 mm to 40	30.00	m	50.00	1,500.00	41.50	1,245.00
7	Dismantling of road including taking out soling, metalling etc, stacking of serviceable materials and disposal of unserviceable materials within a lead of 50 m : Water bound macadam	270.00	Cum	1060.00	2,86,200.00	397.13	1,07,225.10
8	EXTERNAL SERVICES DEMOLITION Dismantling of dry stone pitching including stacking of serviceable materials and disposal of unserviceable materials within a lead of 50.	50.00	Cum	1060.00	53,000.00	302.70	15,135.00
9	Dismantling of fence including supports of MS sections, pipe, wooden or any other material or combination of materials, along with foundations of supports, hooks, bolts etc., excavation of earth including refilling the earth etc., stacking of serviceable materials and disposal of unserviceable materials within 50 m lead : Barbed wire / chain link / expanded metal / concertina wire and the like.	155.00	Sqm	160.00	24,800.00	21.05	3,262.75
10	Dismantling of fence including supports of MS sections, pipe, wooden or any other material or combination of materials, along with foundations of supports, hooks, bolts etc., excavation of earth including refilling the earth etc., stacking of serviceable materials and disposal of unserviceable materials within 50 m lead : Wooden batten / boards	50.00	Sqm	450.00	22,500.00	21.05	1,052.50
Selective demolition							
11	Demolishing lime concrete / cement concrete in all mixes, in foundations, super structure and basement, at all heights / depths, including disposal of unserviceable materials upto a 50 m lead.	120.00	Cum	1250.00	1,50,000.00	221.85	26,622.00
12	Demolishing RCC work in foundations, super structure and basement, at all heights / depths, including cutting, straightening scrapping, cleaning and stacking of reinforcement bars and disposal of unserviceable materials upto a 50 m lead.	380.00	Cum	2500.00	9,50,000.00	960.80	3,65,104.00

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Annexure (A)

1	M/s.Sound Wizard - Auroville - appointed by Kalakshetra (for Acoustics study)	EAW & Audix products	M/s.Aditya infotech	9-Nov-09	29-Nov-09	6170870
2		Speaker and Stand products	M/s.E & E Systems (India) Pvt Ltd	24-Mar-10	11-Aug-10	1927488
3		MIC and Stand products	M/s.Senheiser Electronics India pvt Ltd /M/s.Telerad	24-Mar-10	31-Mar-10	673047
4		QSC products	M/s.MRH Digital systems private Ltd	7-Dec-10	15-Dec-10	496465
5		Digidesign products	M/s.Anasata computer systems private Limited / Bangalore.	9-Nov-09	3-Dec-10	3100542
6		Tele products	M/s.Sasi Enterprises	9-Nov-09	15-Feb-10	293382
7		Tele products	M/s.Sasi Enterprises	9-Nov-09	8-Mar-10	
8		Projector products	M/s.Projection Design	24-Nov-09	5-May-10	1184597
9		Projector products	M/s.Tempest lighting inc	9-Mar-11	28-Mar-11	314630
10		Samson and Alesis products	M/s.Pro Musicals	25-Nov-09	31-May-10	226685
11		Draper products	M/s.Office 2000	16-Nov-09	25-Feb-10	512891
12		Denon & Pioneer products	M/s.Rivera international	28-Jan-10	27-Mar-10	202125
13		Denon & Pioneer products	M/s.Rivera international	28-Jan-10	12-Feb-10	
14		Denon & Pioneer products	M/s.E & E Systems (India) Pvt Ltd	28-Jan-10	8-Feb-10	43796
15		QSC products	M/s.MRH Digital systems private Ltd	17-Nov-09	19-Dec-09	750908
16		QSC products	M/s.MRH Digital systems private Ltd	17-Nov-09	29-Dec-09	
17		Accessories products	M/s.Reynolds INC	3-Feb-10	25-Feb-10	638213
18		Cable products	M/s.S.U.N. Media Ventures Pvt Ltd.,	18-Nov-09	21-Jan-10	675151
19		Cable products	M/s.S.U.N. Media Ventures Pvt Ltd.,	19-Jan-10	15-Feb-10	76866
20		Cable products	M/s.S.U.N. Media Ventures Pvt Ltd.,	7-Oct-10	28-Jan-11	461489
Total						17749145

Annexure (VI)

Name of work	Advance paid	Amount yet to be recovered
M/s.Chennai Engineers	32,00,000.00	12,24,294.00
M/s.CARD	75,000.00	75,000.00
M/s.Anutone	7,05,724.00	0.00
M/s.Kevin Electricals Pvt Ltd	7,36,316.00	4,86,516.00
M/s.Bhagaban subudhi	2,85,000.00	0.00
M/s.Modern Stage Service, Delhi.	14,36,038.00	0.00
Consultant Shri.Gautam Bhatacharya	20,000.00	20,000.00
M/s.Chennai civil tech research Foundation pvt ltd	42,700.00	0.00
M/s.S.U.N.Media ventures pvt ltd	1,68,788.00	0.00
M/s.Ansata computer Systems	7,45,300.00	0.00
M/s.Pro Musicals	68,600.00	0.00

Rs 12,05,810 / -

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Kalakshetra Foundation - Central Office

Kalakshetra Road
Tiruvanmiyur
Chennai

Retn Kevin Electricals - Security Deposit
Ledger Account

1-Apr-2004 to 13-Jul-2016

Date	Particulars	Vch Type	Vch No.	Debit	Credit
3-12-2010	Dr Canara Bank 2649101001719 Plan A/c <i>Ch. No. :795355/1.12.2010, City Union Bank, Sr.Br. Chennai towards Security Deposit for Theatre Electrical Installation for Koothambalam received from M/s. Kevin Electricals Pvt. Ltd., Vide Rt. No.198/3.12.2010.</i>	BR - Plan	BR-B-23		73,650.00
					73,650.00
	Cr Closing Balance			73,650.00	
				73,650.00	73,650.00

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Kalakshetra Foundation - Central Office

Kalakshetra Road
Tiruvanmiyur
Chennai

Retn Unimech Systems - Security Deposit
Ledger Account

1-Apr-2010 to 13-Jul-2016

Date	Particulars	Vch Type	Vch No.	Debit	Credit
9-12-2010	Dr Canara Bank 2649101001719 Plan A/c Ch. No. :266762/11.11.2010 IOB, Aminjikarai Br. chennai being amount received from M/s. U nimech Systems (Chennai) Pvt. Ltd., towards Retn. & EMD for HVAC Work in Koothambalam Vide Rt. No. 311/9.12.2010.	BR - Plan	BR-B-24		2,95,000.00
					2,95,000.00
	Cr Closing Balance			2,95,000.00	
				2,95,000.00	2,95,000.00

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Kalakshetra Foundation - Central Office

Kalakshetra Road
Tiruvanmiyur
Chennai

Retn Chennai Engineers - Security Deposit
Ledger Account

1-Apr-2010 to 13-Jul-2016

Date	Particulars	Vch Type	Vch No.	Debit	Credit
15-7-2010	Dr Canara Bank 2649101001719 Plan A/c <i>Being Security deposit recd from M/s Chennai Engineers for Koothambalam work vide Bank of Baroda BPO No:584869/07.07. 2010</i>	BR - Plan	BR-B-10		5,00,000.00
					5,00,000.00
	Cr Closing Balance			5,00,000.00	
				5,00,000.00	5,00,000.00

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Annexure (V)

Name of work: Additions, Alterations and civil work in Koothambalam in Kalakshetra Foundation.			
Summary of Consultancy Fees as on date			
SNo	Details of Sub Head / Consultant		Total Amount
1	Dr.Mono Doctor Pingel towards Architect for upgradation of theatre		47,550.00
2	Sub Head I -Civil work Towards Consulting Architect M/s.CARD / Ar.Ravi Nilakantan		30,84,095.88
3	Towards cost of Clerks of Works		12,67,185.00
4	Towards cost of Consultant charges		2,65,513.00
5	Sub Head II -Sound System Towards consultant fee to M/s.Sound Wizard		1,67,556.00
6	Sub Head III - Stage lighting work Towards Stage lighting consultant Shri.Bhattacharya		20,000.00
7	Sub Head IV- Stone sculpure work Towards Vaastu Stone sculpure consultant Shri.Umapathy Archarya		20,000.00
8	Sub Head V- Other consultant Towards Design & implementation		32,836.00
9	Sub Head- Travel expenditure Towards travel expenditure payable to the above Consultant (M/s.CARD, M/s.Sound Wizard,		
a	To M/s.CARD	1,39,105.00	
b	To M/s.Sound Wizard	87,325.00	
c	To M/s.Stage Consultant Shri. Bhattacharya	58,854.00	
d	To others	5,645.00	
			2,90,929.00
	Grand Total		51,95,664.88

Secretary, MOC observed that the required outlays for Kalakshetra and its projects and programmes came from the Consolidated Fund of India and, hence, it was required that the procedures for utilizing them must conform to the Government norms. This was not an option, but an imperative. She further said that the matter should be taken up first by the Works Committee and then its recommendation should be scrutinized by the Finance Committee and the required steps be taken to bring the project in line with rules and also completed physically without loss of time. The Financial Advisor, MOC stated once the recommendations are given by the works committee, the Financial scrutiny would be carried out without loss of time. Saying that it was contractually inadvisable to leave a work incomplete for long time, Sri Mishra said that the Works Committee should attend to both aspects (administrative and physical), confirming and securing ratification for the work already done on one hand and the completion of the remaining work in accordance with the prescribed procedures. He said that in the process accountability issues would get determined.

*6
imposed to be placed
before F A for
completion*

Sri Jha asked how long the Works Committee would require to move the project forward, to which Sri Gundu Rao stated that after a preliminary examination of the matter, there appeared to be a backlog of issues including audit issues which need to be addressed and that a presentation would be required from the architect giving complete details of work already completed and the work to be completed and the physical and financial projections duly associated with the same. For this, there is clarity required on the final physical blue print after which a detailed estimate needs to be made out for due approval.

The agenda item concluded with the Chairman stating that all of the above matters should be considered by the newly formed Works Committee. After a discussion and with the Chairman inviting suggestions for the constituting of the new Works Committee, it was decided that the Works Committee be set up consisting of following members:

- 1) Sri Gundu Rao, Chairman
- 2) Director (i/c), Kalakshetra, Member and Convenor
- 3) Vidvan Sri T M Krishna, Member
- 4) CAO, Kalakshetra, Member

Thereafter the discussion shifted to Master Plan

P. Jayadarsini Gowind
01/07/2016
JAYADARSINI GOWIND
DIRECTOR
KALAKSHETRA FOUNDATION

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Visveswaran over the phone. After ascertaining certain details from the Chairman, she conveyed her thanks and said she would be glad to accept the responsibility. Accordingly, her name was agreed upon.

Sri T M Krishna observed that the procedure for the selection of Director should be done with speed as the post of Director, Kalakshetra, should not remain unoccupied for long. In response, the Chairman said he agreed with that entirely. He said that in the year 2005, the procedure took about four months and that this time around the process needed to be completed sooner.

ITEM NO.7

Koothambalam - Constitution of works committee and Master Plan Committee.

Ahead of the subject coming up for discussion, Guru C. V. Chandrashekhar, said that the work on completing the Koothambalam should be expedited. This sentiment was shared by the Chairman and all present.

Some members wondered whether all the procedural formalities required to be carried out plus the physical completion could possibly be achieved in this financial year. The difficulty in this regard was noted and it was agreed that, nonetheless, the work should be taken up, as per procedure and due process, and completed without any avoidable delay.

The Chairman noted with regret the administrative mishandling and the non-observance of well laid down procedures and due processes as detailed in the GFR while engaging the services of the consulting architect and further finalisation of contracts for civil, electrical and other works to be executed by the consulting architect. He said that this had already been pointed out at the 38th Governing Board meeting.

Lapses listed

To make administrative lapses set right, he reminded the Board that an eleven point rectification procedure had been spelt out, like a road-map, at that meeting. This would need to be taken up by the new works committee that would have to be set up, as the members of the previous Works Committee had relinquished office. The Chairman stressed that the physical completion of the work be carried out quickly but after strictly following all procedures and the eleven point procedure as detailed by the Joint Secretary Sri Venu in the 38th Governing Board meeting.

Priyadarsini Govind 01/07/2016

PRIYADARSINI GOVIND
DIRECTOR
KALAKSHETRA FOUNDATION
UVARMIYUR, CHENNAI-600 041

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THE KALAKSHETRA FOUNDATION
FORTIETH MEETING OF THE GOVERNING BOARD
HELD ON FRIDAY THE 14TH DECEMBER, 2012 AT 10.30 A.M.
KALAKSHETRA FOUNDATION, CHENNAI
MINUTES

Members Present:

1. Sri Gopalkrishna Gandhi, Chairman
2. Smt Sangita Gairola IAS , Secretary, Ministry of Culture, Government of India
3. Kavingar Thiru Ilaya Bharathi
4. Guru Sri C. V. Chandrasekhar
5. Sri P. K. Jha IAS
6. Dr Ambika Kameswar
7. Vidvan Sri T. M. Krishna
8. Sri Karunaker K Menon I.R.A.S. Director i/c
9. Sri Rameshram Misra IAS, Secretary Tourism & Culture, Government of Tamil Nadu
10. Smt Arundhati Nag
11. Sri Ravindra Gundu Rao
12. Sri Abhijit Sengupta

Leave of absence was granted to the following members:

1. Dr R. V. Vaidyanatha Ayyar
2. Vidushi Smt Kumudhini Lakhia
3. Shri Sriram Panchu
4. Dr Preetha Reddy

In attendance:

- 1) Smt Babeeta Narang, Chief Accounts Officer
- 2) Sri S. Ramachandran, Administrative Officer I/c

Before commencing the deliberations, the Chairman extended a warm welcome to the distinguished and eminent members of Governing Board present at the meeting.

He then enquired of the Director (i/c) whether the meeting had the prescribed quorum. Director (i/c) responded by saying that out of the 16 members on the Governing Board, 12 members were present which was more than 1/3rd of the existing strength of the Governing Board. The Chairman then referred to Shri Abhijit Sengupta's raising this issue during the 38th Governing

Prayadarsini Govind
PRAYADARSINI GOVIND
DIRECTOR
KALAKSHETRA FOUNDATION
JWANNIYUR, CHENNAI-600 041.
01/07/2016

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Documents required at site:

- a) Project conceptualization related documents
- b) Administrative approval related documents
- c) Budget approval related documents
- d) estimate for the works/estimate approval/basis of estimate
- e) approval of consultant if any/ press notification of tender/ copy of approved NIT
- f) Measurement book
- g) payment summary
- h) work executed and work remaining
- i) warranty certificates of supply material
- j) inspection certificate of supply material
- k) third party inspection if any
- l) approval of make of supply material if any
- m) minutes of meetings/ general correspondence file

From: Sangh Priya Gautam, T.E., CVC

--
Thanks & regards

G. Saraswathy

2 attachments

 **Doc1.docx**
11K

 **FORMAT.docx**
52K

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Works kalakshetra <works@kalakshetra.in>

Fwd: Intensive Examination

AO Kalakshetra <ao@kalakshetra.in>

7 April 2016 at 12:20

To: Works kalakshetra <works@kalakshetra.in>, CAO Kalakshetra <cao@kalakshetra.in>, Director Kalakshetra <director@kalakshetra.in>

Mr.Srinivasan,

PI see the mail from CVC wherein they have asked the two forms to be filled up. You may submit the forms duly filled in to CAO tomorrow morning positively by 11.30 am.

Thanks

GS

----- Forwarded message -----

From: **Director Kalakshetra** <director@kalakshetra.in>

Date: Thu, Apr 7, 2016 at 11:58 AM

Subject: Fwd: Intensive Examination

To: CAO Kalakshetra <cao@kalakshetra.in>, AO Kalakshetra <ao@kalakshetra.in>

----- Forwarded message -----

From: **SanghPriyaGautam TechnicalExaminer** <sangh.priya@gov.in>

Date: Thursday, April 7, 2016

Subject: Intensive Examination

To: director@kalakshetra.in

For looking into Civil part of work, one JTE Shri P. VijayKumar will also be coming with me. Arrangement for his stay may also be made accordingly for him.

I am also attaching two file along with the mail which we should get filled up, before starting of inspection.

Receipt of mail may be confirmed through return mail.

----- Original Message -----

From: **"SanghPriyaGautam TechnicalExaminer"** <sangh.priya@gov.in>

Date: Apr 5, 2016 11:21:17 AM

Subject: Fwd: Intensive Examination

To: director@kalakshetra.in

Further to add it, my contact no. is 09716632376/011-24600223/011-24651639

----- Original Message -----

From: **"SanghPriyaGautam TechnicalExaminer"** <sangh.priya@gov.in>

Date: Apr 5, 2016 11:02:25 AM

Subject: Intensive Examination

To: director@kalakshetra.in

As discussed earlier, the tour program of undersigned for intensive examination of work is as below:

- Dates: from 11/04/2016 to 13/04/2016
- Incoming flight AI 439 (Ex-Delhi 0600 AM)
- Return Flight AI 539
- Pick-up time at delhi : 03:30 AM on 11/04/2016
- Residential Address: Flat 42-E, Pocket 1 , Mayur Vihar Phase 1, near Akshardham Mandir

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	<ul style="list-style-type: none"> • No.PBG was taken in any of the work. • Interest free advances were given to various firms; Amount of Rs.1805810 yet to be recovered. • Additional works awarded at rates decided without market rate analysis. • EMD for Electrical work was fixed 1% of Quoted Value. • Offer of M/s.Kevin in electrical work was considered in spite of the fact that their EMD was not 1% of their quote and later on it became L – 1. • Irregular renewal of B.G's for Mobilisation Advances. 		
	<ul style="list-style-type: none"> • In slab cooling work, L – 2 offer by M/s.Vibrant is without any signature or seal of firm. • Items supplied by Modern Stage Service are not of make mentioned in P.O.; No embossing of power rating in wattage is there over these equipments. • Excess payment for Item No.104, 131 & 132 to M/s.Chennai Engineers. • There were no proper record of measurement; in spite of that payment was made to firm. 		
	<p>5. Conclusion:</p>		
	<p>There appears to be lack of Technical expertise in the execution of this project. If work would have been awarded to any competent Government Technical body, like Public work Organisations, for supervision of execution and inspection, then Koothambalam Theatre would have been in better shape today.</p>	<p>No comments</p>	

Total	46341000/- -	<p>It is ensured that GFR norms be adhered in award and execution of the said works.</p> <p>As regard observation by CVC for appointment of technical agency for supervision of execution and inspection of works, it is submitted that this office initiated the process of appointment of Project Management Consultant. However the Finance Committee disapproved the appointment of Project Management Consultant citing that CPWD office would be competent to handle this Project.</p>	
4. Summary of irregularities			
<ul style="list-style-type: none"> • No open tender for appointment of Consultant, sub-consultants and contractor. Consultant was appointed on basis of EoI called from five firms. Sub-consultants were engaged by consultant M/s.CARD on its own. The contractors were engaged by sub consultants for different work, on quotation basis, for works valuing as high as 2.19 crores. • No basis of estimate for civil work, given by M/s.CARD. • No estimate of Electrical, Sound, Lighting, Sculpture work by M/s.CARD or sub-consultants. • Higher payment to contractors vis-à-vis estimate by CPWD for executed work. • Poor quality of Civil / Electrical work. • Conditional offer of M/s.Chennai Engineers (as they did not quote for some items) was accepted by M/s.CARD. • M/s.Chennai Engineers (L – 1 for Civil Work) submitted cheque as EMD which was dishonoured: even then its offer was considered and finally it was awarded the work. 	No comments		

bb)

As on date, status of various works under Koothambalam project is tabulated as below:

S. No.	Name of work	Letter of Award	Date of stop	% of work completed approx - w.r.t awarded value
1	Civil work	17.6.2010	10.04.2012	65%
2	M/s.CARD	11.9.2009	10.04.2012	-
3	Roof insulation work	08.18.2010	10.04.2012	80%
4	Anutone board supply	18.8.2010	20.10.2010	100%
5	Electrical work	28.9.2010	10.04.2012	45%
6	HVAC work	08.10.2010	10.04.2012	75%
7	Slab cooling work	24.2.2011	10.04.2012	75%
8	Sculpture work	28.3.2011	13.10.2011	100%
9	Sound	Supply part already completed: No coverage for installation & Commissioning		

Considering the status of work already done in Koothambalam Project and huge investment of about seven crores already done in this but auditorium not being operational yet, Management of KF had decided to make the theatre just operational and for this they, with help of CPWD and other consultants, prepared an estimate of Rs.46341000/-. The abstract of above estimate is as below:

Civil & Electrical work	32305000/-	Estimate by CPWD
HVAC and Slab Cooling	6500000/-	Estimate by earlier Consultant M/s.Air Treatment Engineering Pvt Ltd
Sound System	3086000/-	Estimate by earlier Consultant M/s.Sound Wizard
Lighting	2550000/-	Estimate by earlier Consultant M/s.Gautam Bhattacharya Delhi
Sculpture	500000/-	Estimate by earlier Consultant M/s.Bhagvan Subudhi
Consultancy Fee- PMC and HVAC	1400000/-	-

Revised tabulation sheet be enclosed as **Annexure (IV)**

The Civil & Electrical estimate provided by the CPWD.

However for HVAC, Slab Cooling, Stage lighting, Sound System & Sculpture works, being specialized in nature, they advised to take the services of the original consultants as they were aware of the intricacies of the works. Based on their advice, this office took the services of the original consultants for the said works in order to work out the estimated cost to complete the said works.

	Electrical Installation	1878510/-	2050450/-	Minus 08.39%	sheet be enclosed as Annexure (I)	Based on the records, the observation is derived by CVC.
	Additional Electrical work	673177/-	552041/-	Plus 21.94%		
	HVAC	9373149/-	8385263/-	Plus 11.78%		
	Total	37335327/-	31114973/-	Plus 16.97%		
	<p>Thus it is can be concluded that rate at which contract awarded / payment made to contractor is higher than estimated rate given by CPWD.</p> <p>More-over after going through records, it appears as if contractors executed only those parts of their scope of work which were financially suiting to them and rest they disowned and never operated. Finally it resulted in non –operational condition of Koothambalam theatre.</p>					
x)	<p>It was informed by Director; KF that roof was leaking heavily in rainy days in spite of huge expenses on roof work to the tune of approx. Rs.59.40 lacs. However there was no means to verify the same by inspecting officials. This again shows the poor quality of works by M/s.Chennai Engineers.</p>					<p>The statement is based on the present status / condition of the Koothambalam and observation by CVC officials.</p>
y)	<p>Supervision of execution, inspection and measurement of work before releasing the payment was in the scope of M/s.CARD (or its representative i.e Clerk of Works). But no records of inspection have been found during Intensive Examination. The measurement has been directly entered in Measurement Book itself. The role of KF Engineer Officer was totally neglected in this case and this was the over – dependency on Architect Consultant, in violation to Commission’s guidelines on the subject.</p>					
z)	<p>In Civil work, SOR item No.131& 132 (i.e “Providing & Fixing Mangalore “tiles and “Fixing Mangalore tiles” respectively) were in quantity 200 sqm and 2500 sqm respectively. Item 131 was to be executed with new tiles and item 132 was to be executed with old removed tiles. There was no record kept for old removed tiles. Finally quantity executed actually is 1016.93 and 995.32 sqm from item 131 & 132 respectively. The rate of item 131 was Rs.910 per unit and rate of item 132 was Rs.350. Thus it seems as if quantity which supposed to be executed in item 132 was actually shown to be executed in item 131, with using old tiles. Hence it was an undue financial favour to civil contractor M/s. Chennai Engineers.</p>					<p>Verified and found to be correct.. (copies enclosed) Annexure (II)</p>
aa)	<p>For item no. 104 unit rate was Rs.3700 per cubic meter. Thickness of floor screeding was 75 mm thick as per drawing. However payments were made with thickness of 80 mm. Thus it was an attempt made purposely to give undue advantages to M/s.Chennai Engineers.</p>					<p>Verified and found to be correct. (copies enclosed) Annexure (III)</p>

	<p>Photo image (Poor Quality of Civil Work)</p> <p>Photo image (Poor Quality of Electrical Connection) Page No.8</p>	<p>It is based on inspection at site, as per site condition photos taken by CVC during inspection</p>																																									
	<p>Photo image (Poor Quality of Civil Work) Page No.9</p> <p>These site pictures show poor quality of Civil Work as well as Electrical Work in spite of huge spending of Rs. 7 crores by KF.</p>	<p>Photo taken on page No.9, regarding poor quality civil work is pertaining to the old structure of koothambalam.</p>																																									
<p>w)</p>	<p>The Estimate rates have been worked out by CPWD, Chennai and the summary is as below:</p> <table border="1" data-bbox="260 846 842 1317"> <thead> <tr> <th>Work</th> <th>Awarded Value</th> <th>Estimated Value of awarded work as per CPWD</th> <th>% Variati on</th> </tr> </thead> <tbody> <tr> <td>Civil</td> <td>21909505/-</td> <td>17506135/-</td> <td>Plus 25.15%</td> </tr> <tr> <td>Roof Insulation</td> <td>3271750/-</td> <td>2578180/-</td> <td>Plus 26.90%</td> </tr> <tr> <td>Electrical Installation</td> <td>4908773/-</td> <td>5976901/-</td> <td>Minus 17.87%</td> </tr> <tr> <td>HVAC</td> <td>11800000/-</td> <td>10492252/-</td> <td>Plus 12.67%</td> </tr> <tr> <td>Total</td> <td>41890028/-</td> <td>36553468/-</td> <td>Plus 14.60%</td> </tr> </tbody> </table> <p>The percentage below or above, for executed value of work vis-à-vis Estimate given by CPWD is also tabulated as below:</p> <table border="1" data-bbox="248 1570 863 1912"> <thead> <tr> <th>Work</th> <th>Executed Value of Contract</th> <th>Estimated Value of Executed Work as per CPWD</th> <th>% Variation</th> </tr> </thead> <tbody> <tr> <td>Civil</td> <td>14377973/-</td> <td>10596194/-</td> <td>Plus 35.67%</td> </tr> <tr> <td>Additional Civil Work</td> <td>7760768/-</td> <td>6952845/-</td> <td>Plus 11.62%</td> </tr> <tr> <td>Roof Insulation</td> <td>3271750/-</td> <td>2578180/-</td> <td>Plus 29.22%</td> </tr> </tbody> </table>	Work	Awarded Value	Estimated Value of awarded work as per CPWD	% Variati on	Civil	21909505/-	17506135/-	Plus 25.15%	Roof Insulation	3271750/-	2578180/-	Plus 26.90%	Electrical Installation	4908773/-	5976901/-	Minus 17.87%	HVAC	11800000/-	10492252/-	Plus 12.67%	Total	41890028/-	36553468/-	Plus 14.60%	Work	Executed Value of Contract	Estimated Value of Executed Work as per CPWD	% Variation	Civil	14377973/-	10596194/-	Plus 35.67%	Additional Civil Work	7760768/-	6952845/-	Plus 11.62%	Roof Insulation	3271750/-	2578180/-	Plus 29.22%	<p>The figures mentioned in the tabulation is verified and found to be correct.</p> <p>Revised tabulation</p>	
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		equipment, stage lighting work & stone sculpture works, no estimates have been given by M/s.Sound wizard, Sh Gautam Bhattacharya and Stapathy.K.P.Umpathy Acharya. The estimated cost was arrived based on their market enquiry after receiving the quote from the agencies by respective consultants.	
u)	The Finance Committee and Governing Board of KF on passing the payment to Architect, Consultants and Contractors without questioning the genuineness of these payments and also without ensuring whether all requirements as per GFR and Commission's circular are being followed or not. Thus their rule is also questionable.	Though it is correct that the FC and GB during the meetings approved the payments under the Koothambalam Project, However, it is submitted that the proposals for the works undertaken under part-A of the Koothambalam Project were not placed in a proper manner by the management and on being asked in the meetings, the management ensured that the norms of GFR were being adhered.	
v)	Following are the site photos taken from the sites Photo image (Poor Quality of Civil Work) Photo image (Poor Quality of Civil work) Page No.7	It is based on inspection at site, as per site condition photos taken by CVC during inspection	

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	not available. Quotation which is claimed to be submitted by M/s.Vibrant doesn't have any name or signature of any representative of M/s.Vibrant. Thus it seems to be forged.	correct.	
q)	M/s.Modern Stage Supply has supplied their own make PAR Light in the packing of other make i.e M/s.PR Make while make had to be of M/s.PR as per P.O placed upon them. Also there is no mention of wattage on these lights. Thus it is difficult to ascertain whether the supply received is same as ordered or otherwise. Same need to be checked for other supply items also.	Verified all the items as per the bill claimed by M/s.Modern stage service and found to be correct except item under sl.No.9 -SOR, Type -PRO Stage-Make - PR lighting - 6 Nos. not traceable.	
r)	Sound system equipments have been supplied but there is no coverage for fixing of these equipments, under any contract. All these equipments are lying in very pathetic condition in non AC room where they may absorb moisture and catch dust. Finally becoming useless. Their warranty period has also already expired. More - over it is also surprising why only supply part was kept in the scope of vendor and why not commissioning also in spite of the fact that supplier may be best familiar with their product and they are best for commissioning of their products. For the time being, these products need to be urgently put in AC rooms.	The procuring of sound equipments was effected without coverage of fixing as suggested by the sound consultant, except item no. 11 - Revised tabulation sheet be enclosed as Annexure (A) Draper products - M/s. Office 2000). The integration of sound system will be undertaken at the finishing stage. Hence scope of the vendor is limited to supply only. All the supplied sound equipments were now placed and stored in Air conditioned room immediately as observation raised by CVC for compliance.	
s)	Samples have been taken from site concrete / wooden / anutone board. The report may be pursued by Ministry.	Yes, the action from MoC is awaited.	
t)	No estimate have been provided by the M/s.CARD for Electrical, Sound, Lighting, Slab cooling and Sculpture. Due to this, justification the rates on which these works have been awarded is questionable.	No estimates have been provided by M/s.CARD for the Electrical work, Slab cooling work. The justification of rates was vested with M/s.CARD as per clause For other works sound	

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	Stage Service, Delhi.				
	Consultant Shri.Gautam Bhattacharya	20,000.00	20,000.00		
k)	Additional work awarded in civil work was to the tune of Rs.7760767.84/- which is approximately 33.33% of total awarded cost. Thus it is very clear that favour was extended to M/s.Chennai Engineers by M/s.CARD, by awarding high value of additional work, without justifying the rate of these additional items by market rate analysis, just accepting the rate given by M/s. Chennai Engineers. Same is the case in other area where additional work has been awarded e.g. Electrical, Lighting, Roof work and Sculpture.			Verified the observation raised by CVC is found to be correct.	
l)	EMD for Electrical Work was kept to be 1% of Quoted Value. Thus during the opening of bids and their Technical Evaluation itself, it was known that who would be L – 1.			- Do -	
m)	For Electrical work, EMD submitted by L – 1 M/s.Kevin Electricals Private Limited was less than 1% of their quoted rate. Even then its offer was considered valid and it was finally awarded the work.			- Do -	
n)	For Electrical work, B.G. for Mobilisation advance was valid up to 17.02.2011 and its renewal was done on 03.03.2011. Thus considerable period of 14 days was left uncovered without any B.G.for Mobilisation Advance, Thus it was a mistake on part of KF that they did not forfeit the already submitted B.G. in case renewed B.G. was not received by them. Later on also, renewed B.G. was submitted after the expiry of validity period.			- Do -	
o)	<p>For HVAC Work, six bids were originally received from the Bidders as below:</p> <ul style="list-style-type: none"> • M/s.ETA • M/s.Blue Star • M/s.VK HVAC • M/s.Chill Tech • M/s.Unimech • M/s.Laxmi Aircon <p>M/s. ETA was L – 1 as per original offer. However revised bids were called for this work, by M/s.CARD without assigning any reason. These revised bids were called only from three firms, by passing Blue Star, VK HVAC and Laxmi Aircon, on ground that they didn't quote for all items. (M/s.VK HVAC & M/s. Blue Star didn't quote for HVLS Fan and M/s. Laxmi Aircon did not quote for those items which were "0" in SOR). Thus without giving any further opportunity, it was made sure to reduce the competition and reducing the possibility of competitive rate.</p>			Verified the observation raised by CVC is found to be correct.	
p)	In Slab Cooling work, as per comparative statement, two offers were received. One from M/s.Cauverry and another from M/s.Vibrant. However the quotation submitted by M/s.Vibrant is			Verified the observation raised by CVC is found to be	

f)	M/s.Chennai Engineers did not quote for item no.72, 73 and 76 of Schedule of Rate. Thus it was conditional offer by M/s.Chennai Engineers. Even then its offer was considered valid. M/s.CARD later on evaluated other offers also deducting rates for these three items from their total quote.	- Do -																						
g)	M/s.Chennai Engineers EMD was accepted in the form of cheque which was later on dishonored by bank. It was only after M/s.Chennai Engineers declared as L - 1 that they submitted the proper EMD. Thus at the time of evaluation of bids, M/s.Chennai Engineers offer was not valid as its EMD was not with KF	- Do -																						
h)	No requirement of PBG was there in any of the work awarded for the Koothambalam project. Thus it was totally in violation to laid down practices, keeping the interest of Government Exchequer aside.	No performance bank guarantee was submitted. Whereas, security deposit Rs.5.00 lakh for the civil work by M/s.Chennai Engineers, Rs73650/- for the electrical work by M/s.Kevin electricals and Rs.2.95 lakh for the HVAC work by M/s.Unimech system (Chennai) pvt ltd was deposited as directed by M/s.CARD -consultant Architect. (ledger copies enclosed)																						
i)	Lot of cross-cutting / over writing is there on the revised bids submitted by M/s.Chennai Engineers and that too without accompanying proper signatures. It seems as if rates quoted by M/s.Chennai Engineers are tempered so as to facilitate it to be L- 1	Verified as per records & the observation raised by CVC is found to be correct.																						
j)	Interest free Advances were paid to various firms as tabulated below which is in clear cut violation of Commission's guidelines on the subject matter i.e No.4CC-1-CTE-2 dated 10.04.2007. Moreover the recovery of these was not time based but milestone based and that is the reason recovery is still pending various firms. The summary is tabulated as below	Verified and found to be correct except sculpture work as being specialized nature of work. Revised tabulation sheet be enclosed as Annexure (VI)																						
<table border="1"> <thead> <tr> <th>Name of work</th> <th>Advance paid</th> <th>Amount yet to be recovered</th> </tr> </thead> <tbody> <tr> <td>M/s.Chennai Engineers</td> <td>32,00,000.00</td> <td>12,24,294.00</td> </tr> <tr> <td>M/s.CARD</td> <td>75,000.00</td> <td>75,000.00</td> </tr> <tr> <td>M/s.Anutone</td> <td>7,05,724.00</td> <td>0.00</td> </tr> <tr> <td>M/s.Kevin Electricals Pvt Ltd</td> <td>7,36,316.00</td> <td>4,86,516.00</td> </tr> <tr> <td>M/s.Bhagaban subudhi</td> <td>2,85,000.00</td> <td>0.00</td> </tr> <tr> <td>M/s.Modern</td> <td>14,36,038.00</td> <td>0.00</td> </tr> </tbody> </table>		Name of work	Advance paid	Amount yet to be recovered	M/s.Chennai Engineers	32,00,000.00	12,24,294.00	M/s.CARD	75,000.00	75,000.00	M/s.Anutone	7,05,724.00	0.00	M/s.Kevin Electricals Pvt Ltd	7,36,316.00	4,86,516.00	M/s.Bhagaban subudhi	2,85,000.00	0.00	M/s.Modern	14,36,038.00	0.00		
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	<p>More-over no criteria was fixed for appointment of sub-consultants by M/s.CARD. They were arbitrarily appointed as sub – consultants without observing GFR and Commission’s guidelines.</p>	<p>and Air conditioning (HVAC) and Slab cooling works. More-over no payment was made by KF to above Sub- consultants engaged by M/s.CARD.</p> <p>As regards, the consultants for Sound system, Stage lighting and Stone carving works (Sculpture), their appointment was done directly by Works Committee / KF. Hence, the payment was made by KF.</p> <p>The total expenditure as on date, on account of consultancy charges is Rs.5195664.88 and not Rs.5104230.88. The details is enclosed as Annexure (V)</p>	
d)	<p>None of the above works tabulated in Para 2(e) above were awarded through open tenders. No press publicity was given for these works. Modus – operandi by Architect consultant was simply calling the quotations from limited firms and then awarding the work to any particular firm. It was in total violation of transparency which is essential to be maintained as per clause 14 of Constitution. As per the scope of work of Architect consultant, as mentioned in Para (b) above, Works Committee simply gave approval to recommendation of M/s.CARD regarding appointment of contractors for various works, without ensuring whether necessary guidelines by Commission or General Financial Rules were being followed or not.</p>	<p>The observation by CVC is correct.</p>	
e)	<p>M/s.CARD provided the estimate of Rs.18535585 /- for civil work but L 1 revised offer was accepted @ Rs.21909505/- (except item no.72, 73 & 76). There was no basic of estimate prepared by M/s.CARD. Thus L – 1 accepted offer can’t be said to be justified. More – over L – 1 accepted rates are on much higher side (18.20 % higher) than estimated rate.</p>	<p>Verified as per records & the observation by CVC is correct.</p> <p>The except item was erroneously written as 72,73 & 76 instead of 71,72 & 76</p>	

a)	<p>Open Tender procedure were not followed by Works Committee, for appointment of architect as Consultant, EoI were issued to five agencies which were as below:</p> <ul style="list-style-type: none"> • Mr.Durganand, Artes,Chennai • Ms.Lekha Antony, Chennai • Mr. Elias Koshy, Chennai • M/s.CARD • M/s.N.Manikandan, Madras Design Works, Chennai <p>Ms.Lekha Antony did not respond. Mr. Elias Koshy and Mr.Durganand expressed their inability to participate. Based on the presentation before Works Committee, on 04th August 2009, M/s.CARD was finally selected as Architect consultant. Thus appointment of Architect consultant, without calling their price bid even, was in violation of Commission's guidelines, i.e. No. OFF 1 CTE 1 dated 25 / 11 / 2002 as per which appointment of consultant should be made in transparent manner through competitive bidding.</p>	<p>Verified as per the records/files and the observation by CVC found to be correct.</p>	
b)	<p>As per the agreement between KF and M/s.CARD, the powers to receive, analyse and advise KF on the appointment of Contractors were delegated to M/s.CARD. It was again in violation of above said guidelines of the Commission as per which role of consultant should be advisory & recommendatory and final authority & responsibility should be with the departmental officers only.</p>	<p>The observation raised by CVC is contrary to the records available. As per the agreement entered with M/s CARD, his power was advisory in nature.</p> <p>As per the M/s.CARD award letter, he has to associate and co-ordinate with works committee.</p> <p>His recommendations for appointment of contractors were placed in the works committee and on the approval of the works committee; the works were awarded to various contractors.</p>	
c)	<p>As M/s.CARD further appointed sub- consultants for various specific works like sound, lighting, electrical, HVAC, Slab cooling and Sculpture etc. Thus KF had to pay double payment i.e one to M/s.CARD and secondly to specific field consultant. The total expenditure, so far, on account of Consultancy Charge is Rs.5104230.88</p>	<p>The observation by CVC is incorrect. M/s.CARD appointed the sub consultants for Electrical work, Heating Ventilation</p>	

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Sound	17749145/-	-	M/s.Sound Wizard	Supply work awarded to many contractors as per Annexure (A)	<p>The name of contractor was erroneously written as M/s.Unimech system instead of M/s.Unimech system (Chennai) pvt ltd.</p> <p>The name of contractor was erroneously written as M/s.Cauvery agro agencies instead of M/s.Caauvery agro agencies.</p> <p>The name of contractor was erroneously written as M/s.Bhagvan Subudhi instead of M/s.Bhagaban subudhi</p>
HVAC	11800000/-	-	M/s.Air Treatment Engineering private limited	M/s.Unimech System	
Slab Cooling	1297449.40/-	-	M/s.Air Treatment Engineering private limited	M/s.Cauvery Agro Agencies	
Roof Work	3271750/-	-	-	M/s.Chennai Engineers	
Roof work (Supply)	2669293/-	-	-	M/s.Anutone	
Sculpture	695000/-	410000/-	Satpathy Sri.K.P.Umapathy	M/s.Bhagvan Subudhi	
3.OBSERVATIONS					

e)

Total work was divided in eight parts which were as below:

- Civil Work
- Electrical
- Lighting
- Sound
- HVAC
- Slab Cooling
- Roof Work
- Sculpture

Work	Contract Value (Rs.)	Additional Work awarded	Sub-Consultants	Contractor
Civil work	21909505/- (except item no. 71, 72 & 76)	7760767.84 /-	-	M/s.Chennai Engineers
Electrical	4908773.27/-	673177/-	M/s.Madras Electrical Consultant	M/s.Kevin Electricals Private Limited
Lighting	6652244/-	195426/-	M/s.Gautam Bhattacharya, Delhi	M/s.Modern Stage service, Delhi.

The nomenclature of 'Lighting' may be corrected as **stage lighting**.

The figures, name of the consultants and contractor for each work as mentioned in the tabulation is verified and found to be correct.

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Sl.No. as per Report	Introduction	Remarks of the management	Reference and page
1.	<ul style="list-style-type: none"> CVO, Ministry of Culture vide DO letter dated 04.02.2016 had stated that a project of Kalakshetra Foundation named "Koothambalam Project" for the up-gradation and renovation of Koothambalam Auditorium was initiated in 2005-06 and sofar an expenditure of about Rs.7 crores has been incurred upon it. Ministry requested Commission to appoint experts to carry out Technical Examination of the work. Subsequently on the direction of Commission, Intensive Examination of the said work has been carried out from 11.04.2016 to 13.03.2016 	<p>Being factual. Hence no comments.</p> <p>The actual date of intensive examination was erroneously written as 13.03.2016 instead of 13.04.2016.</p>	
	2.Facts of Project		
a)	<p>In 2005-06, the up-gradation and renovation of Koothambalam Auditorium was initiated at Kalakshetra Foundation, Chennai. However, the project was not implemented till constitution of Civil Works Committee in May, 2009 by the Governing Board – following were the members of Works Committee.</p> <ul style="list-style-type: none"> Shri.P.T.Krishnan, an eminent Architect and Member of Governing Board, as Chairman of Works committee. Ms.Leela Samson, Director, Kalakshetra Foundation. Ms.Madhavi Mudgal, Governing Board Member. 	<p>Being factual. However it is submitted that subsequent to the appointment of Sh. Karunakar K. Menon, IRAS officer on deputation to Kalakshetra Foundation as Dy. Director in 25th November 2010, he was included as a part of the said works Committee in 40th GB held on Friday 14th Dec 2012.</p>	
b)	<p>The Works Committee decided to call limited Expression of Interest (EoI) for appointment of Architect. Accordingly, Limited EoI were issued to five agencies in July 2009 and only two of them responded/s.CARD (Centre for Architectural Research & Design) represented by Shri Ravi Nilakantan, was finally selected based on the power point presentation in August 2009. The Works Committee accorded approval to engage M/s.CARD as architect as per the Council of Architecture Norms, 1972.</p>	<p>The observation is correct as per the records available in the office.</p>	
c)	<p>Management, based on recommendation of Works Committee, appointed M/s.CARD as Architect.</p>	- Do -	
d)	<p>As per agreement between KF and M/s.CARD the powers to receive, analyse and advise KF on the appointment of Contractors were delegated to M/s. CARD.</p>	- Do -	

DESCRIPTION OF WORK AND MATERIALS	NAME OF THE SUPPLIERS	QUOTED VALUE In Rs.	POSITION	TOTAL COST AWARDED - L1
4 For Denon & Pioneer Products	M/s.RIVERA International-Mumbai. 4	189187.50	L1	189187.50
	M/s.Thanap - Mumbai .18	200496.88	L2	
	M/s.Audio control - Navi Mumbai.703	206082.50	L3	
5 For Samson & Alesis Products	M/s.Pro Musicals- Chennai .8	228685.00	L1	228685.00
	M/s.i Media international - Chennai.8	240110.00	L2	
	M/s.Susan Electronics-Chennai.8	254080.00	L3	
6 For Cabling products	M/s.Sun Media Ventures Pvt ltd, Mumbai101	762651.00	L1	762651.00
	M/s.Frontiertech consultancy -- Thane.603	843138.00	L2	
	M/s.Envoy Marketing and Distributors- Mumbai 28.	900547.00	L3	

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BID EVALUATION CRITERIA (BEC) FOR SOUND EQUIPMENT IN KOOTHAMBALAM

DESCRIPTION OF WORK AND MATERIALS	NAME OF THE SUPPLIERS	QUOTED VALUE in Rs.	POSITION	TOTAL COST AWARDED -L 1
1 Supplying of EAW & Audix products	M/s.Aditya InfoTech - Chennai .15	6186336.00	L 1	6186336.00
	M/s.Sriram Studio - Chennai 26	7159260.00	L 2	
	M/s.Proserve Business - Chennai.83	7476100.00	L 3	
2 For Digidesign products	M/s.Anasta computers - Bangalore.	3353951.25	L 1	3353951.25
	M/s.Audio Care - Chennai.116	3699292.50	L 2	
	M/s.Media Link Concepts - Chennai.26	3857625.00	L 3	
3 For supplying of QSC Products	M/s.MRH Digital systems-Mumbai. 7	844771.50	L 1	844771.50
	M/s.Callibre -Mumbai. 7	862425.00	L 2	
	M/s.Ankur electronics - Mumbai. 34	874912.50	L 3	

- EMD for Electrical work was fixed 1% of **Quoted Value**.
- Offer of M/s Kevin in electrical work was considered in spite of the fact that their EMD was not 1% of their quote and later on it became L-1.
- Irregular renewal of B.G.'s for Mobilisation Advances.
- In slab cooling work, L-2 offer by M/s Vibrant is without any signature or seal of firm.
- Items supplied by M/s Modern Stage Service are not of make mentioned in P.O.; only the cover of them is of that make which is mentioned in P.O.; No embossing of power rating in wattage is there over these equipments.
- Excess payment for Item No. 104, 131 & 132 to M/s Chennai Engineers.
- There were no proper record of measurement; in spite of that payment was made to firm.

5. Conclusion:

There appears to be lack of Technical expertise in the execution of this project. If work would have been awarded to any competent Government Technical body, like Public Work Organizations, for supervision of execution and inspection, then Kothambalam Theatre would have been in better shape today.

S.P. C. Gautam
27/04/20

(Sangh Priya Gautam)

Technical Examiner (ESW)

1976
LS

Civil & Electrical Work	32305000/-	Estimate by CPWD
HVAC and Slab Cooling	6500000/-	Estimate by earlier Consultant M/s Air Treatment Engineering Private Limited
Sound System	3086000/-	Estimate by earlier Consultant M/s Sound Wizard
Lighting	2550000/-	Estimate by earlier Consultant M/s Gautam Bhattacharya, Delhi
Sculpture	500000/-	Estimate by earlier Consultant M/s Bhagvan Subudhi
Consultancy Fee- PMC and HVAC	1400000/-	-
Total	46341000/-	-

Thus it is clear that estimates for HVAC, Slab Cooling, Sound, Lighting, Sculpture have been provided by those agencies who have been consultants in earlier Part-A also. It would be better that first appropriate detailing of the work, with complete detailing of design is done and then estimate be prepared based on any SOR or market rate analysis, for the purpose of approval of competent authority and fund provision. More-over a competent technical agency may be engaged for supervision of the execution and inspection, before releasing the payment.

4. Summary of Irregularities:

- No open tender for appointment of Consultant, sub-consultants and contractors. Consultant was appointed on basis of EoI called from five firms. Sub-consultants were engaged by consultant M/s CARD on its own. The contractors were engaged by sub-consultants for different work, on quotation basis, for works valuing as high as 2.19 crores.
- No basis of estimate for civil work, given by M/s CARD.
- No estimate of Electrical, Sound, Lighting, Sculpture work, by M/s CARD or sub-consultants.
- Higher payment to contractors vis-à-vis estimate by CPWD for executed work.
- Poor quality of Civil/Electrical work.
- Conditional offer of M/s Chennai Engineers (as they did not quote for some items) was accepted by M/s CARD.
- M/s Chennai Engineers (L-1 for Civil Work) submitted cheque as EMD which was dishonoured; even then its offer was considered and finally it was awarded the work.
- No PBG was taken in any of the work.
- Interest free advances were given to various firms; Amount of Rs. 1805810/- yet to be recovered.
- Additional works awarded at rates decided without market rate analysis.

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z) In Civil work, SOR item No. 131 & 132(i.e. "Providing & Fixing Mangalore" tiles and "Fixing Mangalore tiles" respectively) were in quantity of 200 sqm and 2500 sqm respectively. Item 131 was to be executed with new tiles and item 132 was to be executed with old removed tiles. There was no record kept for old removed tiles. Finally quantity executed actually is 1016.93 sqm and 995.32 sqm for item 131 & 132 respectively. The rate of item 131 was Rs. 910 per unit and rate of item 132 was Rs. 350. Thus it seems as if quantity which was supposed to be executed in item 132 was actually shown to be executed in item 131, with using old tiles Hence it was an undue financial favor to civil contractor M/s Chennai Engineers.

aa) For item no. 104 unit rate was Rs. 3700 per cubic meter. Thickness of floor screeding was 75 mm as per drawing. However payment were made with thickness of 80 mm. Thus it was an attempt made purposely to give undue advantage to M/s Chennai Engineers.

bb) As on date, status of various works under Koothambalam Project is tabulated as below:

S.No.	Name of work	Letter of Award	Date of stop	% of work completed approx. w.r.t awarded value
1	Civil work	17.6.2010	10.04.2012	65%
2	M/s.CARD	11.9.2009	10.04.2012	-
3	Roof insulation work	08.18.2010	10.04.2012	80%
4	Anutone board supply	18.8.2010	20.10.2010	100%
5	Electrical work	28.9.2010	10.04.2012	45%
6	HVAC work	08.10.2010	10.04.2012	75%
7	Slab cooling work	24.2.2011	10.04.2012	75%
8	Sculpture work	28.3.2011	13.10.2011	100%
9	Sound	Supply part already completed; No coverage for installation & Commissioning		

Considering the status of work already done in Koothambalam Project and huge investment of about seven crores already done in this but auditorium not being operational yet, Management of KF had decided to make the theatre just operational and for this they, with the help of CPWD and other consultants, prepared an estimate of Rs. 46341000/- . The abstract of above estimate is as below:

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The percentage below or above, for executed value of work vis-à-vis Estimate given by CPWD is also tabulated as below:

Work	Executed Value of Contract	Estimated Value of Executed Work as per CPWD	% Variation
Civil	14377973/-	10596194/-	Plus 35.67%
Additional Civil Work	7760768/-	6952845/-	Plus 11.62%
Roof Insulation	3271750/-	2578180/-	Plus 29.22%
Electrical Installation	1878510/-	2050450/-	Minus 08.39%
Additional Electrical Work	673177/-	552041/-	Plus 21.94%
HVAC	9373149/-	8385263/-	Plus 11.78%
Total	37335327/-	31114973/-	Plus 16.97%

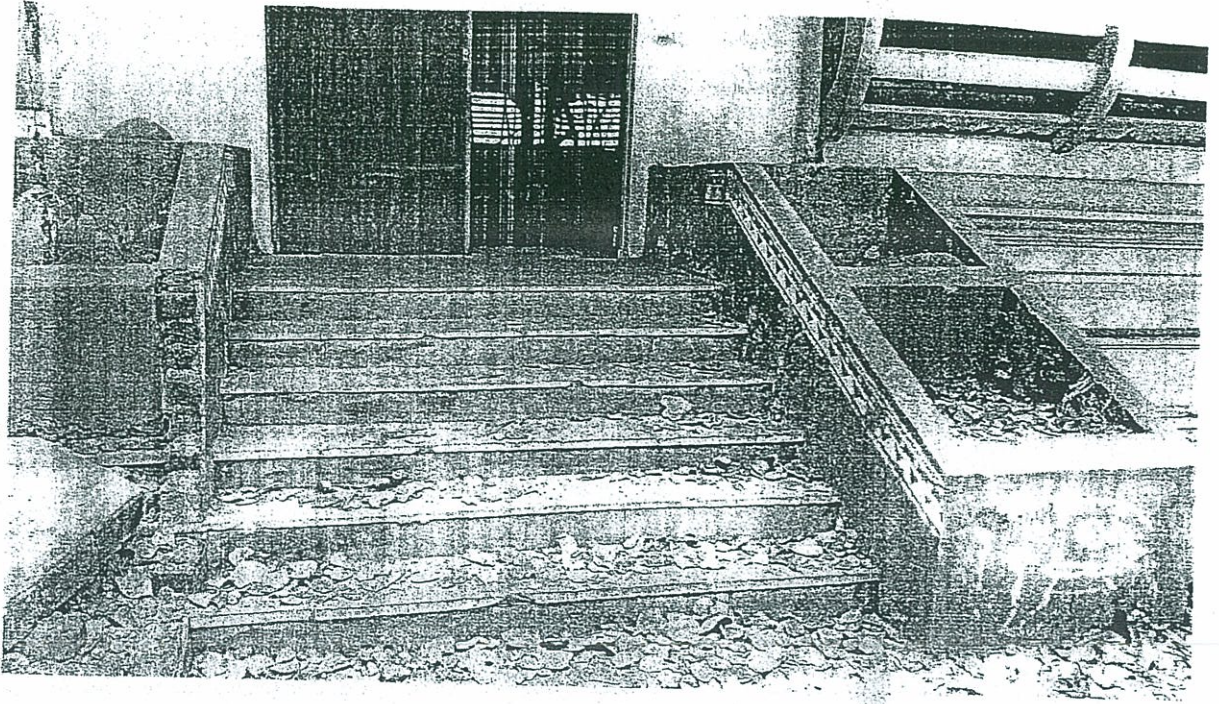
Thus it is can be concluded that rate at which contract awarded/ payment made to contractor is higher than estimated rate given by CPWD.

More-over after going through records, it appears as if contractors executed only those parts of their scope of work which were financially suiting to them and rest they disowned and never operated. Finally it resulted in non-operational condition of Kothambalam Theatre.

x) It was informed by Director, KF that roof was leaking heavily in rainy days in spite of huge expenses on roof work to the tune of approx. Rs. 59.40 lacs. However there was no means to verify the same by inspecting officials. This again shows the poor quality of works by M/s Chennai Engineers.

y) Supervision of execution, inspection and measurement of work before releasing the payment. was in the scope of M/s CARD (or its representative i.e. Clerk of Works). But no records of inspection have been found during Intensive Examination. The measurement has been directly entered in Measurement Book itself. The role of KF Engineer Officer was totally neglected in this case and this was the over-dependency on Architect Consultant, in violation to Commission's guidelines on the subject.

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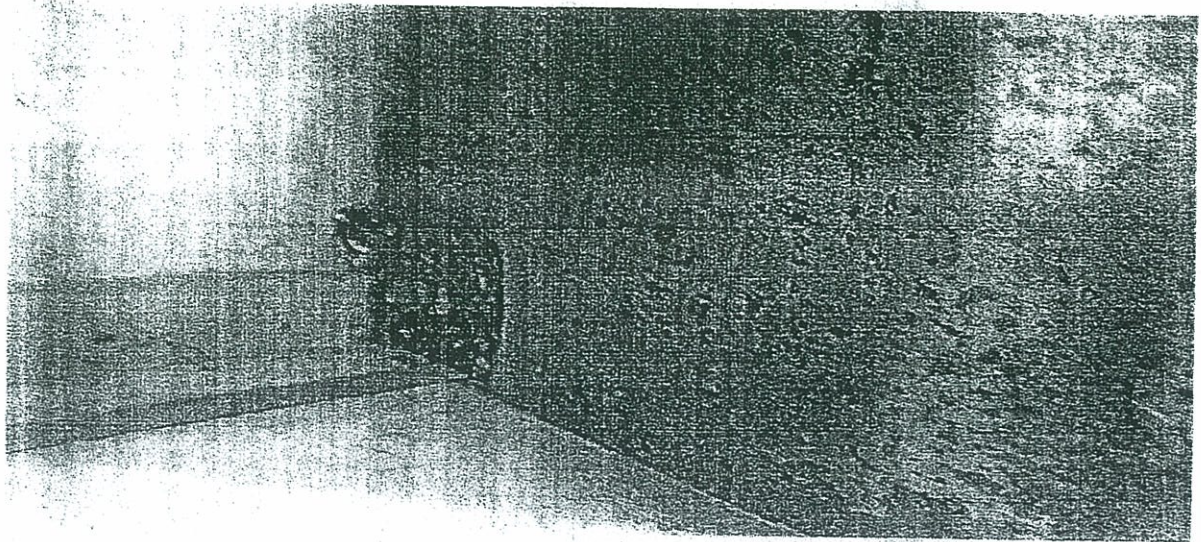
(Poor Quality of Civil Work)

These site pictures show poor quality of Civil Work as well as Electrical Work in spite of huge spending of Rs. 7 crores by KF.

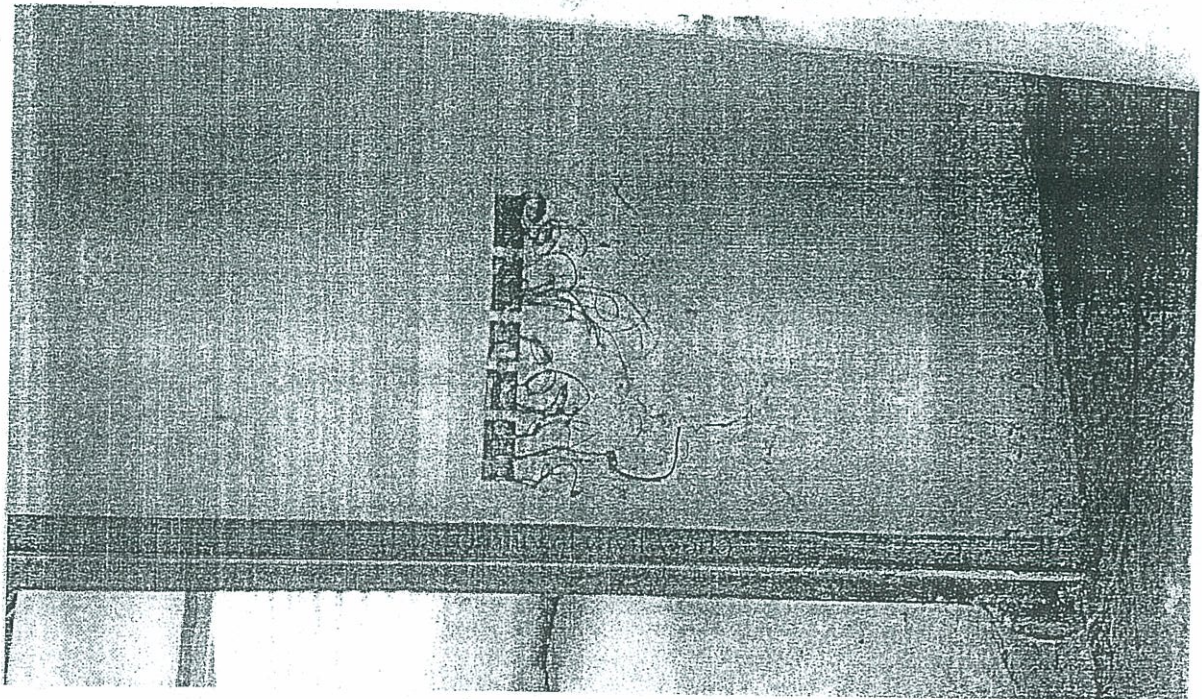
w) The Estimated rates have been worked out by CPWD, Chennai and the summary is as below:

Work	Awarded Value	Estimated Value of awarded work as per CPWD	% Variation
Civil	21909505/-	17506135/-	Plus 25.15%
Roof Insulation	3271750/-	2578180/-	Plus 26.90%
Electrical Installation	4908773/-	5976901/-	Minus 17.87%
HVAC	11800000/-	10492252/-	Plus 12.46%
Total	41890028/-	36553468/-	Plus 14.60%

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(Poor Quality of Civil Work)



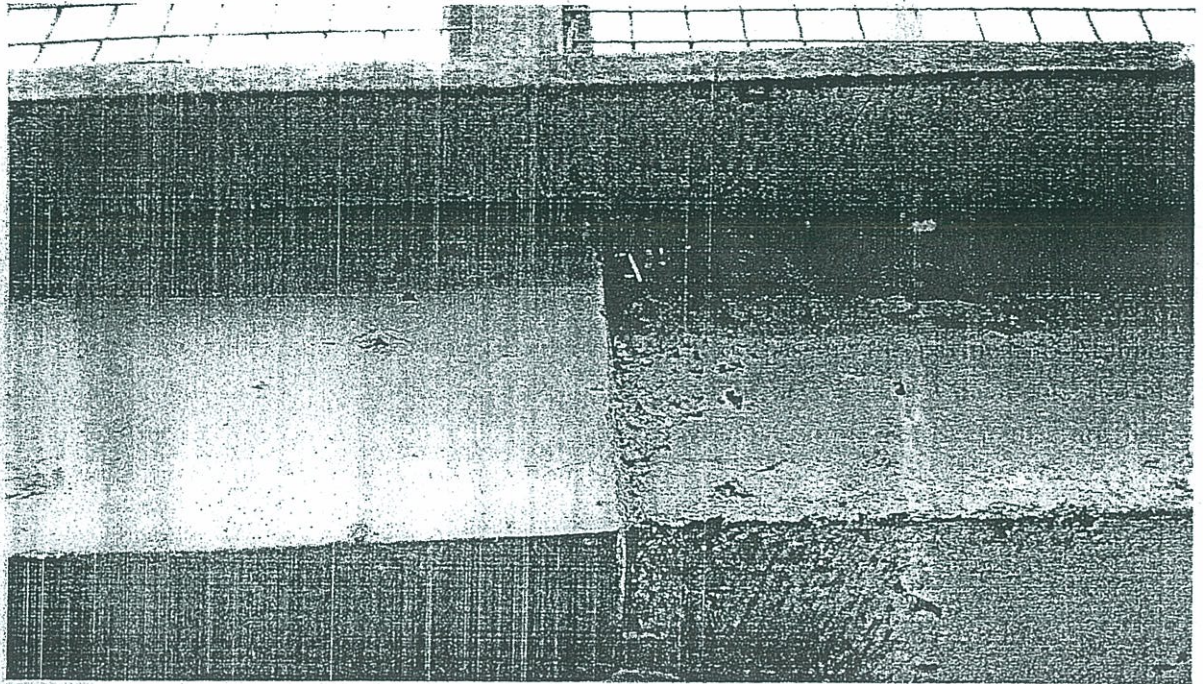
(Poor Quality of Electrical Connection)

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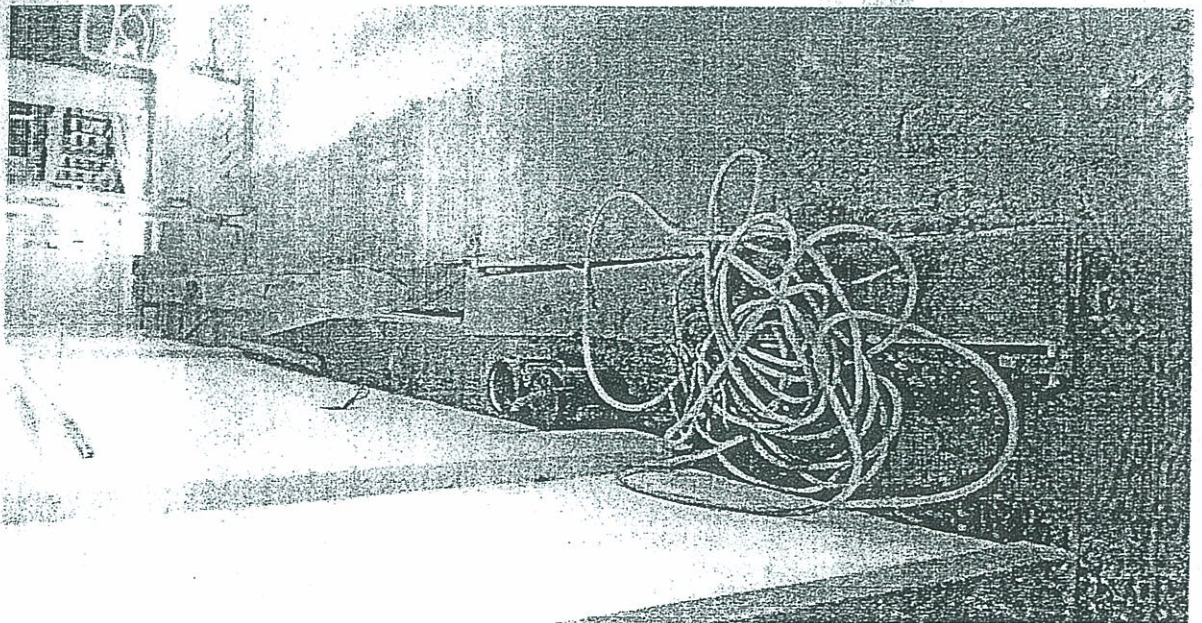
t) No estimates have been provided by the M/s CARD for Electrical, Sound, Lighting, . Slab Cooling and sculpture. Due to this, justification of the rates on which these works have been awarded is questionable.

u) Finance Committee and Governing Board of KF kept on passing the payment to Architect, Consultants and Contractors without questioning the genuineness of these payments and also without ensuring whether all requirements as per GFR and Commission's circular are being followed or not. Thus their role is also questionable.

v) Following are the site photos taken from the sites.



(Poor Quality of Civil Work)



(Poor Quality of Civil Work)

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l) EMD for Electrical Work was kept to be 1% of **Quoted Value**. Thus during the opening of bids and their Technical Evaluation itself, it was known that who would be L-1.

m) For Electrical work, EMD submitted by L-1 M/s Kevin Electricals Private Limited was less than 1 % of their quoted rate. Even then its offer was considered valid and it was finally awarded the work.

n) For Electrical work, B.G. for Mobilization advance was valid up to 17.02.2011 and its renewal was done on 03.03.2011. Thus considerable period of 14 days was left uncovered without any B.G. for Mobilization Advance. Thus it was a mistake on part of KF that they did not forfeit the already submitted B.G. in case renewed B.G. was not received by them. Later on also, renewed B.G. was submitted after the expiry of validity period.

o) For HVAC Work, six bids were originally received from the Bidders as below:

- M/s ETA
- M/s Blue Star
- M/s VK HVAC
- M/s Chill Tech
- M/s Unimech
- M/s Laxmi Aircon

M/s ETA was L-1 as per original offer. However revised bids were called for this work, by M/s CARD, without assigning any reason. These revised bids were called only from three firms, bypassing Blue Star, VK HVAC and Laxmi Aircon, on ground that they didn't quote for all items. (M/s VK HVAC & M/s Blue Star didn't quote for HVLS Fan and M/s Laxmi Aircon did not quote for those items which were "0" in SOR). Thus without giving any further opportunity, it was made sure to reduce the competition and reducing the possibility of competitive rate.

p) In Slab Cooling work, as per comparative statement, two offers were received. one from M/s Cauvery and another from M/s Vibrant. However the quotation submitted by M/s Vibrant is not available. Quotation which is claimed to be submitted by M/s Vibrant doesn't have any name or signature of any representative of M/s Vibrant. Thus it seems to be forged.

q) M/s Modern Stage Supply has supplied their own make PAR Light in the packing of other make i.e. M/s PR Make while the make had to be of M/s PR as per P.O. placed upon them. Also there is no mention of wattage on these lights. Thus it is difficult to ascertain whether the supply received is same as ordered or otherwise. Same need to be checked for other supply items also.

r) Sound system equipments have been supplied but there is no coverage for fixing of these equipments, under any contract. All these equipments are lying in very pathetic condition in non-AC room where they may absorb moisture and catch dust. finally becoming useless. Their warranty period has also already expired. More-over it is also surprising why only supply part was kept in the scope of vendor and why not commissioning also in spite of the fact that supplier may be best familiar with their product and they are best for Commissioning of their products. For the time being, these products need to be urgently put in AC rooms.

s) Samples have been taken from site for concrete/ wooden/ anutone board. The report may be pursued by Ministry.

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f) M/s Chennai Engineers did not quote for item no. 72, 73 and 76 of Schedule of Rate. Thus it was a conditional offer by M/s Chennai Engineers. Even then its offer was considered valid. M/s CARD later on evaluated other offers also deducting rates for these three items from their total quote.

g) M/s Chennai Engineers EMD was accepted in the form of cheque which was later on dishonored by the bank. It was only after M/s Chennai was declared as L-1 that they submitted the proper EMD. Thus at the time of evaluation of bids, M/s Chennai Engineers offer was not valid as its EMD was not with KF.

h) No requirement of PBG was there in any of the work awarded for the Koothambalam project. Thus it was totally in violation to laid down practices, keeping the interest of Government Exchequer aside.

i) Lot of cross-cutting/ overwriting is there on the revised bids submitted by M/s Chennai Engineers and that too without accompanying proper signatures. It seems as if rates quoted by M/s Chennai Engineers are tempered so as to facilitate it to be L-1.

j) Interest free Advances were paid to various firms as tabulated below which is in clear cut violation of Commission's guidelines on the subject matter i.e. No. 4CC-1-CTE-2 dated 10.04.2007. Moreover the recovery of these was not time based but milestone based and that is the reason recovery is still pending various firms. The summary is tabulated as below:

Name of work	Advance paid	Amount yet to be recovered
M/s Chennai Engineers	32,00,000.00	12,24,294.00
M/s.CARD	75,000.00	75,000.0
M/s Anutone	7,05,724.00	0.00
M/s Kevin Electricals Private Limited	7,36,316.00	4,86,516.00
M/s Bhagvan Subudhi	2,85,000.00	0.00
M/s Modern Stage Service, Delhi	14,36,038.00	0.00
Consultant Shri.Gautam Bhattacharya	20,000.00	20,000.00

k) Additional work awarded in civil work was to the tune of Rs. 7760767.84/- which is approximately 33.33% of total awarded cost. Thus it is very clear that favor was extended to M/s Chennai Engineers by M/s CARD, by awarding high value of additional work, without justifying the rate of these additional items by market rate analysis, just accepting the rate given by M/s Chennai Engineers. Same is the case in other area where additional work has been awarded e.g. Electrical, Lighting, Roof work and sculpture.

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3. OBSERVATIONS

a) Open Tender procedures were not followed, by Works Committee, for appointment of Architect as Consultant. EoI were issued to five agencies which were as below:

- Mr. Durganand, Artes, Chennai.
- Ms. Lekha Antony, Chennai
- Mr. Elias Koshy, Chennai
- M/s CARD
- Mr. N. Manikandan, Madras Design Works, Chennai

Ms. Lekha Antony did not respond. Mr. Elias Koshy and Mr. Durganand expressed their inability to participate. Based on the presentation before Works Committee, on 04th August 2009, M/s CARD was finally selected as Architect consultant. Thus appointment of Architect consultant, without calling their price bid even, was in violation of Commission's guidelines, i.e. No. OFF 1 CTE 1 dated 25/11/2002 as per which appointment of consultant should be made in a transparent manner through competitive bidding.

b) As per the agreement between KF and M/s CARD the powers to receive, analyse and advise KF on the appointment of Contractors were delegated to M/s CARD. It was again in violation of above said guidelines of the Commission as per which role of consultant should be advisory & recommendatory and final authority & responsibility should be with the departmental officers only.

c) As M/s CARD further appointed sub-consultants for various specific works like sound, lighting, electrical, HVAC, Slab Cooling, and Sculpture etc. Thus KF had to pay double payment i.e. one to M/s CARD and secondly to specific field consultant. The total expenditure, so far, on account of Consultancy Charge is Rs. 5104230.88/-.

More-over no criteria was fixed for appointment of sub-consultants by M/s CARD. They were arbitrarily appointed as sub-consultants without observing GFR and Commission's guidelines.

d) None of the above works tabulated in Para 2(e) above were awarded through open tenders. No press publicity was given for these works. Modus-operandi by Architect consultant was simply calling the quotations from limited firms and then awarding the work to any particular firm. It was in total violation of transparency which is essential to be maintained as per clause 14 of the Constitution. As per the scope of work of Architect consultant, as mentioned in Para (b) above, Works Committee simply gave approval to recommendation of M/s CARD regarding appointment of contractors for various works, without ensuring whether necessary guidelines by the Commission or General Financial Rules were being followed or not.

e) M/s CARD provided the estimate of Rs. 18535585/- for civil work but L-1 revised offer was accepted @ Rs. 21909505/- (except item no. 72, 73 & 76). There was no basis of estimate prepared by M/s CARD. Thus L-1 accepted offer can't be said to be justified. More-over L-1 accepted rates are on much higher side (18.2% higher) than estimated rate.

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Summary of above eight parts is tabulated as below:

Work	Contract Value (Rs.)	Additional Work awarded	Sub-consultant	Contractor
Civil Work	21909505/- (except item no. 71,72 & 76)	7760767.84/-	-	M/s Chennai Engineers
Electrical	4908773.27/-	673177/-	M/s Madras Electrical Consultant	M/s Kevin Electricals Private Limited
Lighting	6652244/-	195426/-	M/s Gautam Bhattacharya, Delhi	M/s Modern Stage Service, Delhi
Sound	17749145/-	-	M/s Sound Wizard	Supply work awarded to many contractors as per Annexure-A
HVAC	11800000/-	-	M/s Air Treatment Engineering Private Limited	M/s Unimech System
Slab Cooling	1297449.40/-	-	M/s Air Treatment Engineering Private Limited	M/s Cauvery Agro Agencies
Roof Work	3271750/-	-	-	M/s Chennai Engineers
Roof Work (Supply)	2669293/-	-	-	M/s Anutone
Sculpture	695000/-	410000/-	Satpathy Sri K.P. Umaphathy	M/s Bhagvan Subudhi

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5

1. Introduction

- CVO , Ministry of Culture vide DO letter dated 04.02.2016 had stated that a project of Kalakshetra Foundation named " Koothambalam Project" for the up-gradation and renovation of Koothambalam Auditorium was initiated in 2005-06 and so far an expenditure of about Rs. 7 crores has been incurred upon it.
- Ministry requested Commission to appoint experts to carry out Technical Examination of the work.
- Subsequently on the direction of the Commission, Intensive Examination of the said work has been carried out from 11.04.2016 to 13.03.2016.

2. Facts of Project:

a) In 2005-06, the up-gradation and renovation of Kothambalam Auditorium was initiated at Kalakshetra Foundation, Chennai. However the project was not implemented till the constitution of Civil Works Committee in May, 2009 by the Governing Board. Following were the members of Work Committee:

- Shri P.T. Krishnan, an eminent Architect and Member of Governing Board, as Chairman of Work Committee
- Ms. Leela Samson, Director, Kalakshetra Foundation
- Ms. Madhavai Mudgal, Governing Board Member

b) The Works Committee decided to call limited Expression of Interest (EoI) for appointment of Architect. Accordingly Limited EoI were issued to five agencies in July 2009 and only two of them responded. M/s CARD (Centre for Architectural Research & Design) represented by Shri Ravi Nilakantan, was finally selected based on the power point presentation in August 2009. The Works Committee accorded approval to engage M/s CARD as architect as per the Council of Architecture Norms, 1972.

c) Management, based on the recommendation of Works Committee, appointed M/s CARD as Architect.

d) As per the agreement between KF and M/s CARD the powers to receive, analyse and advise KF on the appointment of Contractors were delegated to M/s CARD.

e) Total work was divided in eight parts which were as below:

- Civil Work
- Electrical
- Lighting
- Sound
- HVAC
- Slab Cooling
- Roof Work
- Sculpture

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ORGANIZATION

Kalakshetra Foundation

INSPECTION PERIOD

11.04.2016 to 13.04.2016

Inspected By

Sangh Priya Gautam,
Technical Examiner

Assisted By:

P. Vijay Kumar, Junior Technical Examiner

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C.T.E. A. NO. 04-16 - A-25 - ESW-10
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गोपनीय
CONFIDENTIAL

भारत सरकार
केन्द्रीय सतर्कता आयोग
मुख्य तकनीकी परीक्षक संगठन

GOVERNMENT OF INDIA
CENTRAL VIGILANCE COMMISSION
CHIEF TECHNICAL EXAMINER'S ORGANISATION



सत्यमेव जयते

कार्य की गहन जांच पर रिपोर्ट
A REPORT ON
THE INTENSIVE EXAMINATION OF WORK

द्वारा:/By :
श्री/Shri. SP. GAUTAM

तकनीकी परीक्षक/Technical Examiner
केन्द्रीय सतर्कता आयोग/Central Vigilance Commission
'सतर्कता भवन' / 'Satarkta Bhavan'
ब्लॉक-ए, जी.पी.ओ. कॉम्प्लेक्स, आई.एन.ए./ Block-A, GPO Complex, INA,
नई दिल्ली/ New Delhi-110023

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KALAKSHETRA
FOUNDATION
No.: 4267
DATE: 30.6.2016

016/EDN/007/315755
315755

25/05/2016

OFFICE MEMORANDUM

Sub: Koethambalam Project of Kalakshetra Foundation, Chennai.

The above work was technically examined during April, 2016 by a team of the Commission. The Intensive Report is being referred to you for a detailed vigilance investigation. It is requested that the detailed Investigation Report may be submitted to the Secretary, CVC under intimation to the CTE Unit of the Commission within a period of 1 months.

3. For the purpose of investigation, CVC, M/o Culture may refer to the instructions contained in the publication of the Commission namely "Intensive Examination of Works (Guidelines)" issued vide Commission's letter No.OFF-1-CTE-2 dated 02/11/2001. CVC, M/o Culture may appoint an independent and reliable Engineer (only if any technical issue is involved and if considered necessary) to assist you in identifying and seizing the relevant records preparing scrutiny notes thereon, fixing responsibilities, calling for the explanations of the indicated officials and preparing scrutiny notes on the validity of the explanation received. The report may conclude with comments and recommendations of CVC, M/o Culture in respect of each lapses referred for investigation. All the above notes and explanation may be included in the investigation report.

4. Receipt of this letter may be acknowledged.

Yours faithfully,

(Ashok Kumar)
Director

Ministry of Culture,
(Sh ML Srivastava, CVO),
R.No. 202, Purathatav Vibhag,
INA, New Delhi

Encl: As above.

- Copy to:
- (i) The Secretary, M/o Culture, C-wing, Shastri Bhawan, New Delhi. 110001 for information and further necessary action.
 - (ii) T&E (SH) for information w.r.t. F. No. 04-16-A-25-ESW-10.

Handwritten notes:
 RA
 30/6/2016
 -16.00am
 RA
 This document is confidential. Its content is confidential. Its confidentiality is maintained.

27 MAY 2016

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