

REPORT ON FINALIZATION OF LAYOUT, MAKING MEASUREMENTS FOR PARTITION ETC., FOR SETTING UP OF MPEDA NaCSA AQUA LABORATORY AT KAKINADA

Date: 30/01/2020

As instructed by HO (File No: AP5-ADMN/3/2020-O/o QC LAB NELLORE Subject: AQUA LAB – KAKINADA), undersigned proceeded to Kakinada on 21/01/2020 for finalization of layout of MPEDA NaCSA Aqua Laboratory.

Undersigned along with Mr. N. P Chandrasekha, Regional Coordinator, NaCSA, Kakinada visited the site and taken measurements of 2nd floor (room wise) for partition and furniture required in various rooms. Finalized layout (attached **Annex-1**) has been prepared for setting up of the following sections in the lab:

- 1) PCR lab
- 2) Water & Soil testing lab
- 3) ELISA lab
- 4) Microbiology lab
- 5) Technical service area

A) THE FOLLOWING INTERIOR WORKS ARE TO BE CARRIED OUT:

- 1) False ceiling
- 2) Glass partition
- 3) Vinyl flooring
- 4) Electrical work
- 5) Fabrication of granite top tables with cupboard in various rooms
- 6) Plumbing line in various rooms
- 7) Providing Air conditioners in various rooms
- 8) Painting

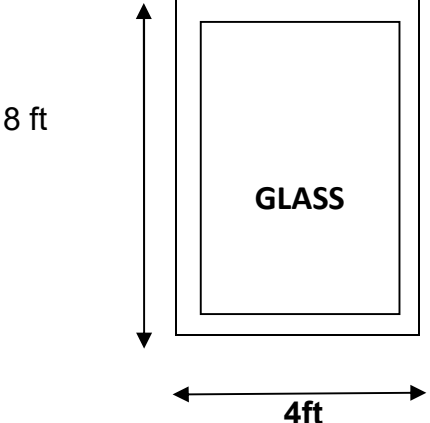
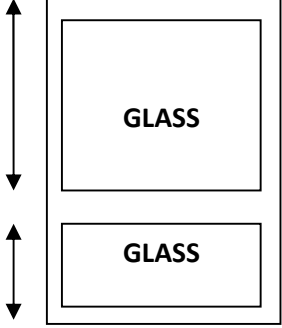
1) FALSE CEILING

- a. Entire 4000 Sft with POP (Plaster of Paris) sheets (12mm) (water proof), Channel - 5mm may be made.

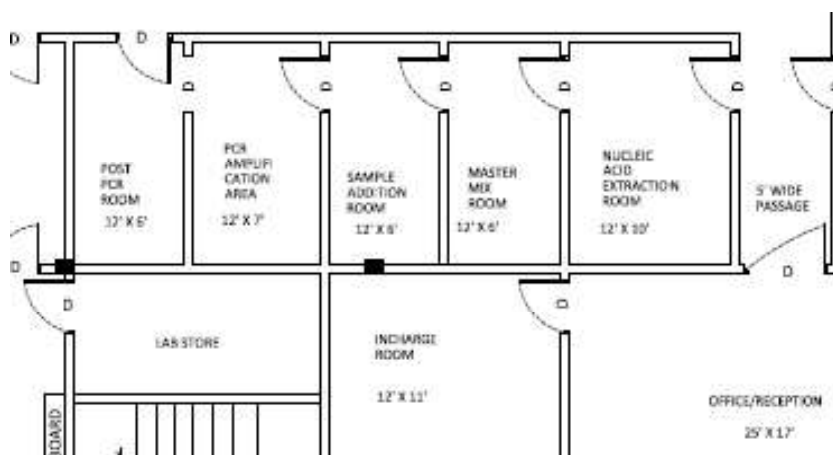
2) PARTITION WORK:

- a. Details of partition room wise of lab section are given in **Annex-II**

- b. Partition of each room may be carried out with aluminum frame with glass at top and wooden partition with sun mica at bottom of partition.
- c. Powder coated Aluminum frame partitions as shown in figure may be made in every room:

OPTION-I (WITH FRAME & GLASS)	OPTION-II ((WITH FRAME & GLASS))
	
<p>Required glass thickness: 8mm</p> <p>Aluminium: 2.5X1.5 & thickness 1.5mm</p>	<p>Required glass thickness: 6mm</p> <p>Aluminium: 2.5X1.5 & thickness 1.5mm</p>

- d. **Conference Hall:** - Washroom side may be closed with Bison panel (23 X 8 ft).
- e. Middle shutter may be closed with bison panel adjacent to store room in office area.
- f. **Sample storage room:** Adjacent to office may be closed with bison panel (4X8 ft) & racks may be provided at this area to store samples which can be stored at room temperature.
- g. Partition at PCR lab section may be provided with laminated board at sample addition, master mix room & nucleic acid extraction room adjacent to in charge room & office room (Ref: Below figure)



h. Laboratory entry door may be made with 6ft X 6ft as shown in below Figure:

Lab Entry door (Model):



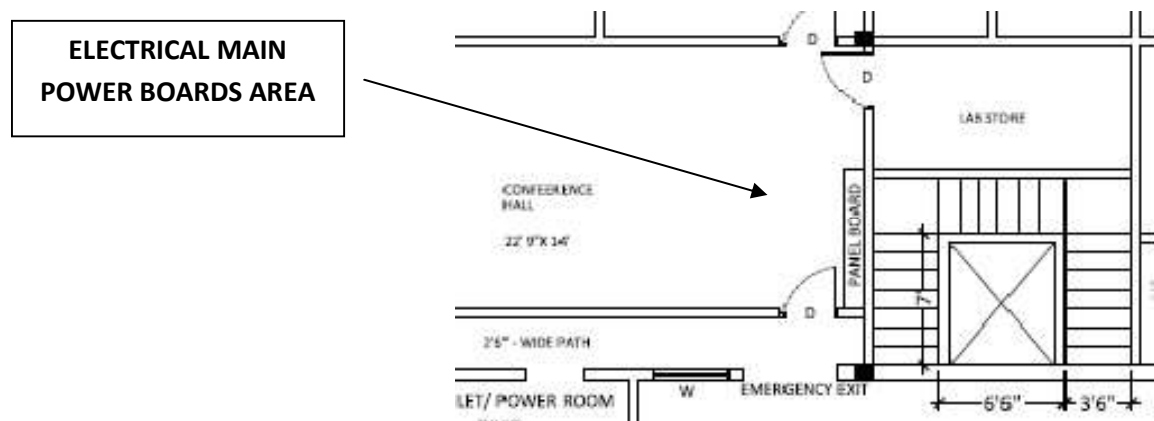
i. Bison panel may be provided at lab store adjacent to post & PCR amplification room as shown in layout (ref: figure at caluse 2 g).

3) VINYL FLOORING:

Entire laboratory except office room, lab in-charge room and conference hall may be made with vinyl flooring. Special flooring mat may be made in conference hall (**if required**).

4) ELECTRICAL WORK:

Electrical work may be carried out in every room as mentioned in **Annex-III**. All electrical panels may be fixed at conference hall as shown in below figure:



Generator set may be installed at south east corner of building at ground floor which was agreed by building owner. Bed for generator may be provided. Details of power requirement is given at **Annex-III**

5) FABRICATION OF GRANITE TOP TABLES WITH CUPBOARD IN VARIOUS ROOMS:

- a) Details of granite top tables to be fabricated with sinks and tap (as shown in below figure) also prepared which is given at Annex-IV.

Model Granite top table:



- b) Wooden racks (16' X 1' 3" and 16' X 1' 8") at both sides in lab store may be provided for storing stock of various lab items.

6) PLUMBING LINE IN VARIOUS ROOMS:

Details of taps (water line) required at various rooms are given below:

S. No.	Area	No. of taps
1	Sample preparation areas (grinding)	1
2	Sample extraction room	2
3	Microbiology: Sample preparation	1
4	Microbiology: Sterilization	1
5	Microbiology: Discarding	1
6	Common washing area	1

Model taps are given in figure for fixing in various rooms.

Model Laboratory Faucet: **Model Laboratory Faucet for Microbiology lab:**



7) PROVIDING AIR CONDITIONERS IN VARIOUS ROOMS:

Air conditioner is to be provided in the following rooms:

S. No.	Area	Type of AC	Capacity
1	Instrument room (ELISA reader)	Split air conditioner	2T
2	Microbiology : Inoculation room	Split air conditioner	1T
3	Microbiology : Incubation room	Split air conditioner	1T
4	Microbiology : Observation room	Split air conditioner	1T
5	PCR section all rooms	Split air conditioner	5T
6	In charge room	Split air conditioner	1.5T
7	Office room	Split air conditioner	2T
Total			13.5 T

8) PAINTING:

Putty - wall: Two coats of cement based putty on walls over one coat primer. .

Painting - Wall: Applying of two coats of acrylic emulsion on wall over one coat primer. It should be tolerant up to 70°C temperature and it should be resistant to common lab solvents and chemicals.

Painting is also required to do for ceiling also.

B) THE FOLLOWING POINTS WERE DISCUSSED WITH BUILDING OWNER ON 22/01/2020:

1. Flooring of entire lab with vitrified tiles has to be done by building owner.
2. Three phase electrical power connection of (LT-low tension line) is to be obtained from electrical Department of Andhra Pradesh.
3. Plumbing line (water and draining line) as per MPEDA requirement (as shown in layout) is to be carried out.
4. Provision may be provided at parking area for keeping generator set (62.5 KVA).
5. Additional washroom may be provided for visitors at 2nd floor or existing 3rd washroom may be modified for visitors.
6. Washroom of inside Laboratory (in extraction room) may be dismantled, which is not recommended to keep inside laboratory.
7. Space for earthing work may be made available near generator set at ground floor of building.

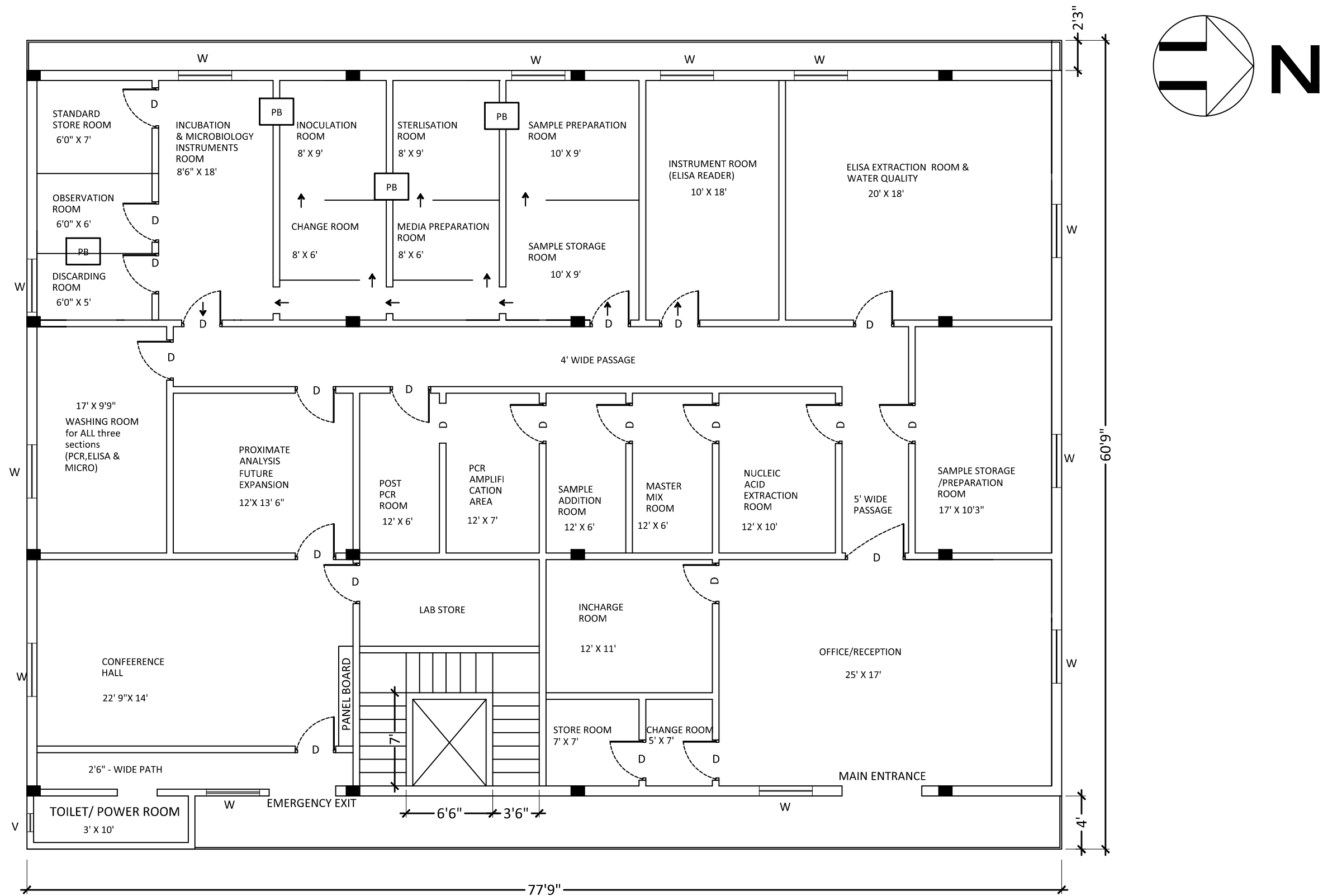
C) POINTS TO BE NOTED:

- 1) List of parameters (water quality, Microbiology and PCR) to be tested may be finalized. Hence it would be easy to go for NABL accreditation.
- 2) We may propose to procure 62.5KVA generator set by disposal of existing 20KVA of ELISA Lab, Kakinada under buy back. Platform (6' X 4' X 6") for generator set is to be constructed at ground floor.
- 3) Two Ton capacity of water tank may be provided for laboratory for water distillation / water purification system, washing of glassware & laboratory items etc.
- 4) Potable water availability for water distillation / water purification system may be ensured.
- 5) Three entry doors (shutters) were provided by building owner. Center door may be closed permanently with bison panel which is not required. One entry door near to steps may be used as emergency exit. Third entry (at North east corner) may be used as main entry to the laboratory which may be provided with glass double door of 6ft with proper lock and key.
- 6) Additional Toilet provided in side laboratory may be removed completely, which is not required and not suitable in the extraction room of lab.
- 7) Exhaust system may be provided at Sterilization room, Discarding room, sample preparation & storage room (common) & laboratory store.
- 8) Check list may be prepared work wise to monitor the work while executing.



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Date: 30/01/2020



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MPEDA NACSA AQUA LAB
KAKINADA

MPEDA NaCSA Aqua Lab, Kakinada

Details of each room for partition

S. No.	Particular of room	Area (ft) of room	Area (L & H = sft) of Partion to be carried out	
I) Common areas for all sections:				
1	Office & staff room	25' X 17' ft	25 X 8 ft	200
			17 X 8 ft	136
2	Lab-incharge's room	12' X 11' ft	12 X 8 ft	96
3	Store room	7' X 7' ft	7 X 8 ft	56
4	Change room	5' X 7' ft	7 X 8 ft	56
5	Conference, meeting hall cum Library	22' 9" X 14' ft	22.75 X 8 ft	182
6	Sample storage & Preparation room	17' X 10' 3" ft	17 X 8 ft	136
7	Washing room	17' X 9' 9" ft	17 X 8 ft	136
			10 X 8 ft	80
II) PCR Lab Section:				
8	Nucleic acid extraction room	12' X 10' ft	12 X 8 ft	96
			10 X 8 ft	80
			10 X 8 ft	80
9	Master mix room	12' X 6' ft	12 X 8 ft	96
			6 X 8 ft	48
			6 X 8 ft	48
10	Sample addition	12' X 6' ft	12 X 8 ft	96
			6 X 8 ft	48
			6 X 8 ft	48
11	Amplification room (PCR)	12' X 7' ft	12 X 8 ft	96
			7 X 8 ft	56
			7 X 8 ft	56
12	Post PCR room	12' X 6' ft	12 X 8 ft	96
			6 X 8 ft	48
			6 X 8 ft	48
III) ELISA Lab Section:				
13	Extration room	20' X 18' ft	20 X 8 ft	160
			18 X 8 ft	144
14	Instrument room (ELISA reader)	10' X 18' ft	10 X 8 ft	80
			18 X 8 ft	144
IV) Microbiology Lab Section:				
15	Sample storage	10' X 9' ft	10 X 8 ft	80
16	Sample Preparation	10' X 9' ft	18 X 8 ft	144
			10 X 8 ft	80
17	Media & Chemicals Preparation room	8' X 6' ft	10 X 8 ft	80
18	Sterilization room	8' X 9' ft	9 X 8 ft	72
19	Corridor (inside)	8' X 3' ft	9 X 8 ft	72
20	Inoculation	8' X 9' ft	9 X 8 ft	72
21	change room	8' X 6' ft	6 X 8 ft	48
22	Corridor (inside)	8' X 3' ft	3 X 8 ft	24
23	Incubation room	8' 6" X 18' ft	8.5 X 8 ft	68
			18 X 8 ft	144
24	Standard store room	6' X 7' ft	6 X 8 ft	48

S. No.	Particular of room	Area (ft) of room	Area (L & H = sft) of Partion to be carried out	
25	Observation room	6' X 6' ft	6 X 8 ft	48
26	Discarding (Decontamination) room	6' X 5' ft	6 X 8 ft	48
IV) Proximate analysis (Future expansion):				
27	Proximate analysis	12' X 13' 6" ft	12 X 8 ft	96
			13.5 X 8 ft	108
Total partition area				3878

MPEDA NaCSA Aqua Lab, Kakinada
REQUIREMENT OF POWER, SOCKETS FOR INSTRUMENTS & AREA OF EACH ROOM

S. No.	Particular of room	Name Instrument/ Equipment	Power requirement (KVA)	16AMPs sockets (No.)	6AMPs Sockets (No.)
I) Common areas for all sections:					
1	a) Sample reception & Reception at office entry & Office	1) Computer with printer, scanner, Photocopier & Biometric system	1	1	4
	b) Office for 6 number	2) Air Curtain 2 No's ((Main/Reception Entrance & Lab entrance)	2	-	-
2	Lab-incharge's room	1) One computer system with printer & net facility	0.5	1	3
3	Conference, meeting hall cum Library	1) One computer system with printer & net facility	2	1	3
		2) Projector & screen/ LCD screen	1	1	2
4	Sample storage & Preparation room	1) Deepfreezer - 3nos with Temperature indicator	6	3	3
		2) Mixie	0.5	0	2
		3) Weighing balance	0.25	0	1
5	Washing room	1) Hot air oven	2	1	0
		2) Emergency shower	0	0	0
II) PCR Lab Section:					
1	Nucleic acid extraction room	1) Tissuelyser	0.5	-	1
		2) Cooling centrifuge	2	1	-
		3) Dry bath	1	1	-
		4) Vortex mixer	0.5	-	2
		5) Electronic balance	0.25	-	1
		6) Laminar Air flow	1	1	1
		7) Refrigerator	0.25	-	2
		8) Bio-spectrophotometer	2	1	3
2	Master mix room	1) PCR work station	0.5	1	1
		2) Vortex mixer	0.5	-	1

S. No.	Particular of room	Name Instrument/ Equipment	Power requirement (KVA)	16AMPs sockets (No.)	6AMPs Sockets (No.)
		3) Mini centrifuge	0.5	-	1
		4) Deepfreezer - 1 with Temperature indicator	2	1	1
3	Sample addition	1) PCR work station	0.5	1	1
		2) Vortex mixer	0.5	-	2
		3) Mini centrifuge	0.5	-	1
		4) Deepfreezer with Temperature indicator	2	1	1
4	Amplification room (PCR)	1) Real Time PCR	2	1	2
		2) Thermal cycler	0.5	-	1
		3) Mini centrifuge	0.5	-	1
		4) PCR work station (Nested)	0.5	1	1
		5) UPS Supply -5KVA	5	-	-
5	Post PCR room	1) Gel documentation system	0.5	-	1
		2) Refrigerator	0.25	-	2
		3) Microwave oven	2	1	-
		4) pH meter	0.25		1
		5) Weighing balance	0.25	-	1
III) ELISA Lab Section:					
1	Extraction room	1) Water distillation unit	2	1	-
		2) Cooling Centrifuge	2	1	-
		3) Fume hood chamber with sockets	2	1	1
		4) Concentration work station	2	-	1
		5) Micropipettes	0.5	-	3
		6) Vortex Mixer-3nos	1	-	3
2	Weighing room	1) Analytical balance-2nos	0.5	-	3
3	ELISA reader room	1) ELISA reader with computer system	10	2	4
		2) Refrigerator with temperature indicator	0.25	-	2
		3) UPS-10KVA	0	Input & Out put MCB-62AMPs	

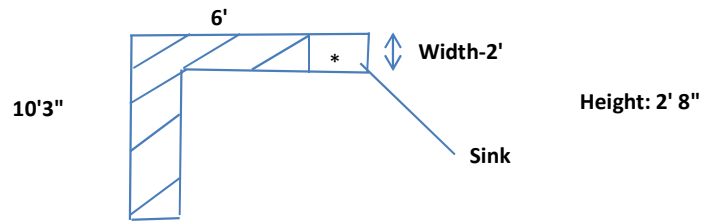
S. No.	Particular of room	Name Instrument/ Equipment	Power requirement (KVA)	16AMPs sockets (No.)	6AMPs Sockets (No.)
IV) Water Quality Testig Section:					
1	Testing area	1) Weighing balance	0.25	-	1
		2) pH meter	0.25	-	1
		3) Salinometer	0	-	-
		4) DO meter	0	-	-
		5) UV Spectrophotometer	2	1	3
		6) Micropipettes	0.25	-	3
		7) Stereo microscope for Imaging	0.5	-	2
V) Microbiology Lab Section:					
1	Sample storage	1) Deepfreezer with Temerature indicator	2	1	1
2	Media & Chemicals Preparation room	1) Weighing balance	0.25	-	1
		2) Refrigerator (Storage of prepared petri plates and chemical)	0.25	-	1
		3) Microwave oven	2	1	-
3	Sterilization room	1) Autoclave	2	-	-
		2) Hot air oven	2	1	1
4	Inoculation & Incubation room	1) Laminar Air flow	1	1	1
		2) Water bath	1	1	1
		3) Incubator	2	1	1
		4) Cyclomixer	0.25	-	1
		5) Mini centrifuge	0.25	-	1
		6) Colony counter	0.1	-	1
		7) Magnetic stirrer	0.25	-	1
5	Discarding (Decontam ination) room	1) Autoclave	2	-	-
6	Observation room	2) Refrigerator with temperature indicator	0.25	-	2
Total			80.6	31	87
Note: Proper earthing need to be done for every UPS System.					

MPEDA NaCSA AQUA LABORATORY

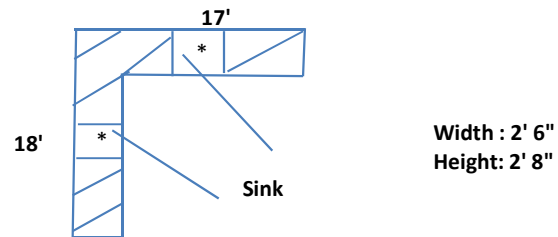
Details of Granite Top Tables with Cupboards

Furniture: Granite Top Tables with Cupboard

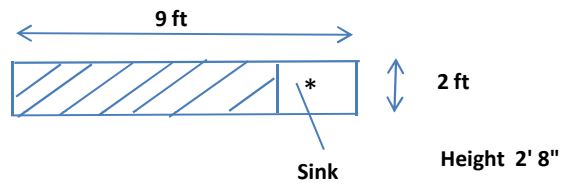
1 Sample Storage/ Preparation Room :-



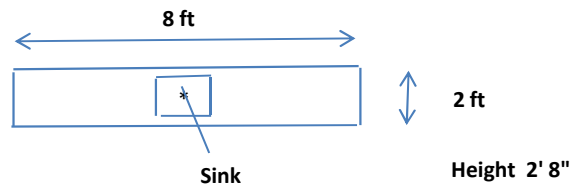
2 Sample (ELISA & Water) Extraction Room : -



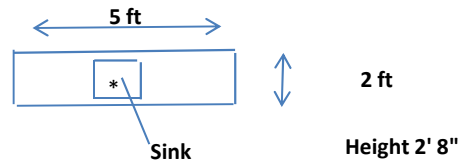
3 Microbiology Lab Sample Preparation :-



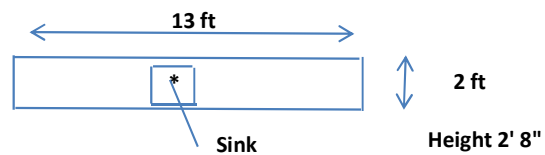
4 Sterilization room:-



5 Discarding & Washing Room

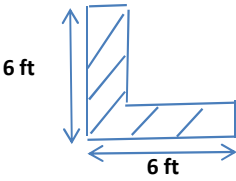


6 Common Washing Room



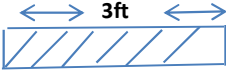
Furniture PCR - Without Sink

7 Nucleic Acid Extraction Room



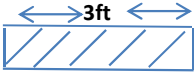
Width & H
2' & 2' 8"

8 Master Mix Room



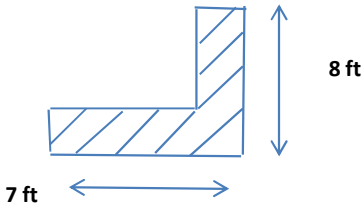
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9 Sample Addition



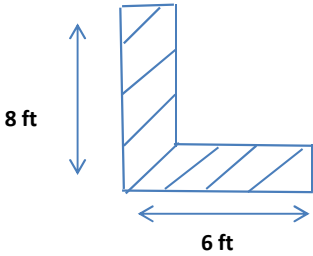
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10 PCR Amplification



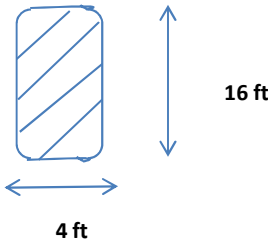
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11 Post PCR



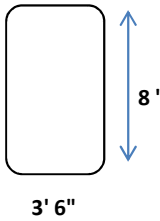
Width & H
2' & 2' 8"

12 Conference Hall : Wooden Table



Height 2' 8"

13 Sample extraction room : Island table two sides cupboard



Height 2' 8"