



# Medical Air Solutions, LLC

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*Technology & Service*

## MAS Project: P-01-24-10

for

Slidell Memorial Hospital

1001 Gause Blvd.

Client: Slidell, LA 70458

Pharmacy Compounding Area Upgrade

**Project Document Date: March 24, 2010**

### Project Participants

New & Associates, LLC

Project Coordinator

Mr. John New

(504) 416-7226 Cell

Medical Air Solutions, LLC

Design/Supplier

Mr. Bob Wiltbank, V. P.

(770) 377-3884 Cell

(770) 977-1407 (Corporate)

(800) 645-1059 (Toll Free)

Unknown

General Contractor

Unknown

Mechanical Contractor

Unknown

Electrical Contractor

Dammon Engineering

Mr. Chuck Dammon, PE

(985) 649-5832

This document identifies project participants and the responsibilities assigned to each to upgrade the present dedicated area for the compounding of sterile preparations (CSP). The responsibilities may overlap in certain areas and, in some cases, change, depending upon the items listed here. Please notify me, Chuck Dammon or John New if there are any errors or questions regarding the assignment of work tasks described here.

Bob Wiltbank

**Medical Air Solutions, LLC.**

(770) 377-3884 Engineering (Cellular - Primary)

(800) 645-1059 Toll Free Corporate Office

(770) 977-9964 Business Office Facsimile

(770) 977-1407 Corporate – Local Atlanta

(877) 840-2013 Engineering & Technology Office (Toll Free including FAX)

## 1.0 General Responsibilities of Project Participants

- 1.1 **New & Associates, LLC (NA)** – Mr. John New will act as the project coordinator for this project and, with he and E. Byrd & Associates selecting sub-contractors to perform trades work. He will coordinate with all companies involved to ensure a successful completion of this project. All aspects of the projects involving changes, additions or corrections should be through him.

He will also coordinate with the Hospital to schedule, if required, any safety orientation meetings such as Interim Life Safety Measures (ILSM) and/or Infection Control Risk Assessments (ICRA) to ensure safe working conditions and to ensure the work area is isolated from the working area of the hospital.

- 1.2 **Dammon Engineering (DE)** – Mr. Chuck Dammon will perform design services and specification of various equipment needed for this project. They will also update the hospital's "As Built" CAD drawing(s) to reflect the changes to the physical plant.
- 1.3 **General Contractor to be determined (GC)** – The GC will perform demolition and some construction of the three (3) rooms being converted to the Compounding of Sterile Preparations (**CSP Area**). He, or his representative, will coordinate with the other participants in this project to perform the tasks required including all subcontractors. **GC** will be the general contractor (**GC**) for this project and will supervise and coordinate with sub-contractors and **AMS** to complete the project. **Note that work being performed by the other trades and services companies (Electrical, Mechanical, Plumbing, flooring, painting, Sprinkler System, Roofing, et al), will be considered to be under the GC and their tasks will be listed under the GC label.**
- 1.4 **American Medical Systems, LLC (AMS)** – Mr. Mike Flood will supervise the installation of all **MAS** supplied equipment, instruments and materials coordinating with **GC** and other sub-contractors.
- 1.5 **Medical Air Solutions, LLC (MAS)** – Mr. Bob Wiltbank will provide technical assistance to all participants before and during the renovation/construction phase. He will also perform commissioning and in-service upon completion of the project. For any question about delivery of **MAS** supplied items, please call Ms. Judi Bowman at (770) 977-1407.

**MAS** will not be responsible for permits or inspections.

## 2.0 Present Area Description

- 2.1 See **MAS** line **Drawing P-01-24-10-1-1**. The rooms to be renovated include the following existing rooms:
  - 2.1.1 **Room 106, Simulation Room** – Except for a doorway from this room to existing Room 107, no other work for this room is required unless the **Client** requests same. **NA** will communicate with the hospital if any additional work in the room is desired.
  - 2.1.2 **Room 107, Patient Room** – This room will become a major part of the **Anteroom**. This room will have an ISO 7 positive pressure environment.
  - 2.1.3 **Room 108, Patient Room** – Part of this room will become a major part of **Buffer Zone 1** which is the low/medium risk compounding room. Part of this room will be a hallway from the **Anteroom** to this part of the **CSP Area**. This room will have an ISO 7 positive pressure environment.
  - 2.1.4 **Room 109, Patient Room** – Part of this room will become a major part of **Buffer Zone 2** which is the high risk compounding room. Part of this room will be a hallway from the **Anteroom** to this part of the **CSP Area**. This room will have an ISO 7 negative pressure environment.
  - 2.1.5 **Hallway, Outside Patient Rooms 107, 108 and 109** – The walls in this area will have the doors removed and closed with wallboard which will require a temporary barrier to ensure dust and other flotsam will not contaminate the working area of the hospital.

## 3.0 Project Tasks in Order of Execution – Prior to Start Date

- 3.1 The execution of the demolition/renovation/construction may have some items being performed simultaneously. This list, and the order of execution, is not “carved in stone” especially in the operation phase of the project. The expeditious completion of the project may dictate field changes in the order of tasks. Refer to **MAS Drawings P-01-24-10-1-2, P-01-24-10-1-3** and the **MAS** written proposal.
- 3.2 The start date of the project will be dependent upon the delivery of the client’s new workstations. Delivery of this type equipment is usually eight (8) weeks. (These are not “off-the-shelf” items and it is advisable for **NA** to request that they order these as soon as possible)
- 3.3 The following abbreviations will be used:
  - 3.3.1 **NA** – New and Associates, LLC
  - 3.3.2 **DE** – Dammon Engineering
  - 3.3.3 **GC** – To be determined (See Section 1.3)
  - 3.3.4 **AMS** – American Medical Systems, LLC
  - 3.3.5 **MAS** – Medical Air Solutions, LLC
  - 3.3.6 **Client** – Slidell Memorial Hospital

- 3.4 The project should generally follow this timeline:
- 3.4.1 **NA** – Confirm with **Client** the area designated to be the **CSP Area** (with appropriate CAD & line drawings) and identify Contractors & sub-contractors), A&E and suppliers of equipment, instruments and materials of construction
- The **Client** will purchase new eight foot (8') laminar airflow workstation (LAFW unit #1) and a new four foot (4') or six foot (6') biological safety cabinet which must be on-site at the beginning of the project and should be ordered post haste (See Section 3.2)
- 3.4.2 **MAS** – Written proposal with line drawings with quote for **MAS** supplied items and indicating requirements for the proposed **CSP Area** to meet USP General Chapter <797> and distribute same to all parties involved in the project. Supplied items are:
- 3.4.2.1 1 – **AirShield™** AS2000EG rooftop mounted APS
  - 3.4.2.2 3 – Laminar Airflow Diffuser Plenums, stainless steel, 2' x 4'
  - 3.4.2.3 2 – Laminar Airflow Diffuser Plenums, stainless steel, 2' x 2'
  - 3.4.2.4 3 - TRRM Remote Sensor Room Pressure Monitors
  - 3.4.2.5 3 - Cleanroom ceiling systems – Anteroom & 2 Buffer Zones
  - 3.4.2.6 1 - Prefabricated wall (**Wall "A"**) with 2 doors, hardware, fasteners, etc.
  - 3.4.2.7 3 x "Pass-throughs"
  - 3.4.2.8 1 x Particle Counter
  - 3.4.2.9 1 x Active Air Sampler
  - 3.4.2.10 4 x LUWM136 upper room UVGI Units
- 3.4.3 **NA, MAS, DE** – Confer to define what architectural and engineering tasks are to be required, which are:
- 3.4.3.1 Design dedicated HVAC recirculating system and associated ducting for the **CSP Area** using fan powered **APS1**
  - 3.4.3.2 Specify type of AHU, with heating, cooling and fresh air intake with the AHU in-line with **APS1** on roof
  - 3.4.3.3 Specify the number of roof penetrations required for supply and return ducting plus a penetration for the **Hood unit #1** exhaust
  - 3.4.3.4 Specify 304 SS return grilles for HVAC system
  - 3.4.3.5 Confer with **NA** to ascertain whether the client require cleanroom lighting units and, if so, specify and designate ceiling grid location
- 3.4.4 **NA** – Order and procure the following as specified by **DE**:
- 3.4.4.1 Air Handling Unit (AHU) with heating and cooling (208/60/3 VAC)
  - 3.4.4.2 304 SS Grilles specified
- 3.4.5 **NA, GC** – Identify and procure the services of the sub-contractors which **GC** will or may need include but is not limited to:
- 3.4.5.1 Mechanical contractor
  - 3.4.5.2 Electrical contractor
  - 3.4.5.3 Plumbing contractor
  - 3.4.5.4 Fire Sprinkler contractor
  - 3.4.5.5 Flooring and Painting contractors
  - 3.4.5.6 Roof Contractor (Usually the one holding the warranty)

- 3.4.6 **NA** – Identify shipment of new workstations and date of delivery. Notify all parties and set a mutually agreeable start date after the date of delivery has been confirmed.

#### 4.0 Project Tasks in Order of Execution – Demolition/Refinishing

- 4.1 The execution of the demolition may have some items being performed simultaneously. This list, and the order of execution, is not “carved in stone” especially in the operating phase of the project. The expeditious completion of the project may dictate field changes in the order of tasks. Refer to the **MAS Drawings P-01-24-10-1-2, P-01-24-10-1-3** and the **MAS** written proposal.
- 4.2 **GC - Plumbing and Service Piping** – The following hot, cold and chiller water pipes and fixtures will be removed or modified:
- 4.2.1 The sinks in the vestibules (outside of the bathroom) of Rooms 107, 108 and 109 will be removed
- 4.2.2 The showers and toilets in the bathrooms of Rooms 107, 108 and 109 will be removed
- 4.2.2.1 One hot and one cold water pipe in Room 107 will be used for a “hands free” sink to be installed after Demo work is complete (See **Drawing P-01-24-10-1-2** for approximate sink location)
- 4.2.2.2 Other pipes must be capped inside the exiting walls
- 4.2.3 All floor drains in Rooms 107, 108 and 109 will be closed and sealed
- 4.2.4 The chilled water for the three (3) heating/cooling units (**HC1, HC2** and **HC3**) in Rooms 107, 108 and 109 will be disconnected and capped
- 4.2.5 It is assumed that the heating for the three (3) heating/cooling units (**HC1, HC2** and **HC3**) in Rooms 107, 108 and 109 is electric but if hot water or steam is utilized, then those pipes will be disconnected and capped
- 4.2.6 The **HC1, HC2** and **HC3** heating cooling units will be removed
- 4.2.7 All medical gases and vacuum piping and service panels will be disconnected from service to Rooms 107, 108 and 109 but the main piping will remain above the ceiling since it may be servicing other rooms
- 4.2.8 Fire Sprinkler piping will remain but will be modified when the sealed ceiling system is installed
- 4.3 **GC – Walls, Windows and Doors** – The following walls, windows and doors will be removed or modified:
- 4.3.1 **Wall 1** will have a portal cut to install a metal door with window and is designated as **Door 3** on **Drawing P-01-24-10-1-2**. The door will open inward and must have a door closer that will close the door in 5 seconds from a full open position
- 4.3.2 The wall separating Room 107 from Room 108, designated **Wall 2** on **Drawing P-01-24-10-1-2**, will have a 5'-6” section removed from the exterior wall towards the interior parallel wall. The end of the removed wall will be finished wallboard

- 4.3.3 The wall separating Room 108 from Room 109, designated **Wall 3** on **Drawing P-01-24-10-1-2**, will have a 5'-7¾" section removed from the exterior wall toward the interior parallel wall. The end of the removed wall will be finished wallboard.
- 4.3.4 The walls, with doors, enclosing the bathrooms in Rooms 107, 108 and 109 and the wallboard ceiling in the vestibule and the soffit will be removed.
- 4.3.5 **Wall 1** and **Wall 2** will be refinished with wallboard where plumbing fixtures and walls enclosing the bathrooms were removed and pipes were capped.
- 4.3.6 **Doors #1, #3 and #5** on **Drawing P-01-24-10-1-1** will be removed (including jambs) and the openings closed with wallboard and the wallboard refinished.
- 4.3.7 The windows in Rooms 107, 108 and 109 on **Drawing P-01-24-10-1-1** will be closed in with wallboard and the wallboard refinished.
- 4.4 **GC – Ceiling and Above Ceiling Area** – The following relate to the demo of the ceiling and the area above the existing ceiling:
  - 4.4.1 The ceilings in Rooms 107, 108 and 107 will be removed with all ceiling air diffusers. With the removal of the bathroom walls, the wallboard ceiling in the vestibules and the soffets, the entire room area should be exposed to the underside of the roof.
  - 4.4.2 Existing lighting in all rooms should be wire hung from the roof beams to provide lighting for construction/renovation.
  - 4.4.3 Remove all unused ducting, piping and conduit.
  - 4.4.4 Cap all ducting that may be open to the house HVAC system.
- 4.5 **GC – Flooring** – The following relates to all floors of the **CSP Area**:
  - 4.5.1 Remove any floor obstructions and fill in any low areas in preparation for a heat welded covering.

## 5.0 Project Tasks in Order of Execution – Renovation/Construction

- 5.1 The installation of the **MAS** supplied equipment, instruments and building materials is performed by **AMS** but will need electrical and mechanical support. Refer to **MAS Drawings P-01-24-10-1-2, P-01-24-10-1-3** and the **MAS** written proposal. As stated earlier, some of these tasks can be performed simultaneously.
  - 5.1.1 **GC – Roof HVAC Units** – Move **APS1 (MAS' AS2000EG APS)** and the specified HVAC unit to the location on the roof as per **DE** drawing and begin connecting the ducting between the units and to the roof penetrations
    - 5.1.1.1 Supply ducting to the **CSP Area** must be either 304 SS or anodized aluminum.
    - 5.1.1.2 Exhaust/Return ducting can be carbon steel.
    - 5.1.1.3 All supply and return ducting must be sealed and insulated.
  - 5.1.2 **GC – Roof HVAC Units, Electrical** – Run conduit and wiring for 208/60/3 VAC power to both the HVAC unit and **APS1**.

- 5.1.3 **GC – Install Emergency Exit Door #E1** – This door will be for emergency exit ONLY via a push bar on the CSP Area side. The door will be sealed on the top, bottom and sides (See **Drawing P-01-24-10-1-2** for the location of the door)
- 5.1.4 **GC – Electrical, Light Switches** – Light switches for all rooms will be moved to a convenient location for the end user and have gaskets behind the wall plates
- 5.1.5 **GC – Electrical, Outlets** – Duplex outlets will be required for the new workstations in **Buffer Zone 1** and **Buffer Zone 2**. The **Client** will advise **NA** and **GC** as to how many additional outlets are required in all rooms and have gaskets behind the wall plates
- 5.1.6 **GC – Workstation Placement** – Move the new CSP workstations to **Buffer Zone 1** and **Buffer Zone 2**
- 5.1.7 **GC – Hood unit #1, Ducting** – Connect the CSP Chemo workstation's exhaust port to the dedicated exhaust duct in **Buffer Zone 2**
- 5.1.8 **AMS – Prefab Wall** – Install prefab Cleanroom Wall system to separate what will be the hallway from the two (2) **Buffer Zones**
- 5.1.9 **AMS – Ceiling** – Install Price **Unitee CR** sealed ceiling grid at the 8'-0" level
- 5.1.10 **AMS – UVGI Units** – Mount the UVGI units on the walls in the **CSP Area** in the approximate locations on **Drawing P-01-24-10-1-2**
- 5.1.11 **GC – Electrical, UVGI units** – These units can be plugged into a duplex outlet or can be hardwired (preferred). The bottom of each unit is mounted so the bottom of the unit is at the 7'-0" (See **Drawing P-01-24-10-1-2** for approximate locations)
- 5.1.12 **GC – Roof Penetrations** – Perform roof penetrations as per the **DE** drawing
- 5.1.13 **AMS – SS Laminar Airflow Plenums** – Install 2' x 2' and 2' x 4' Price 304 SS diffuser plenums in the ceiling grid
- 5.1.14 **GC – Ducting to SS Laminar Airflow Plenums** – Install ducting and any FCV (dampers) in the ducting to the 2' x 2' and 2' x 4' Price 304 SS diffuser plenums above the ceiling grid
- 5.1.15 **GC – Chemo Hood Ducting** – Run ducting for the dedicated exhaust from the roof penetration(s) to a safe area on the roof
- 5.1.16 **AMS – Return Grills** – install the **NA** supplied exhaust grilles in the ceiling grid
- 5.1.17 **GC – Ducting** – Run ducting from the exhaust grilles and any dampers to the return duct roof penetration(s)
- 5.1.18 **AMS – Room Pressure Monitor Boxes** – Install one box each in **Buffer Zone 1**, **Buffer Zone 2** and the **Anteroom** of the flush wall mounted **TRRM** room pressure monitors and affix transformer on wall above ceiling

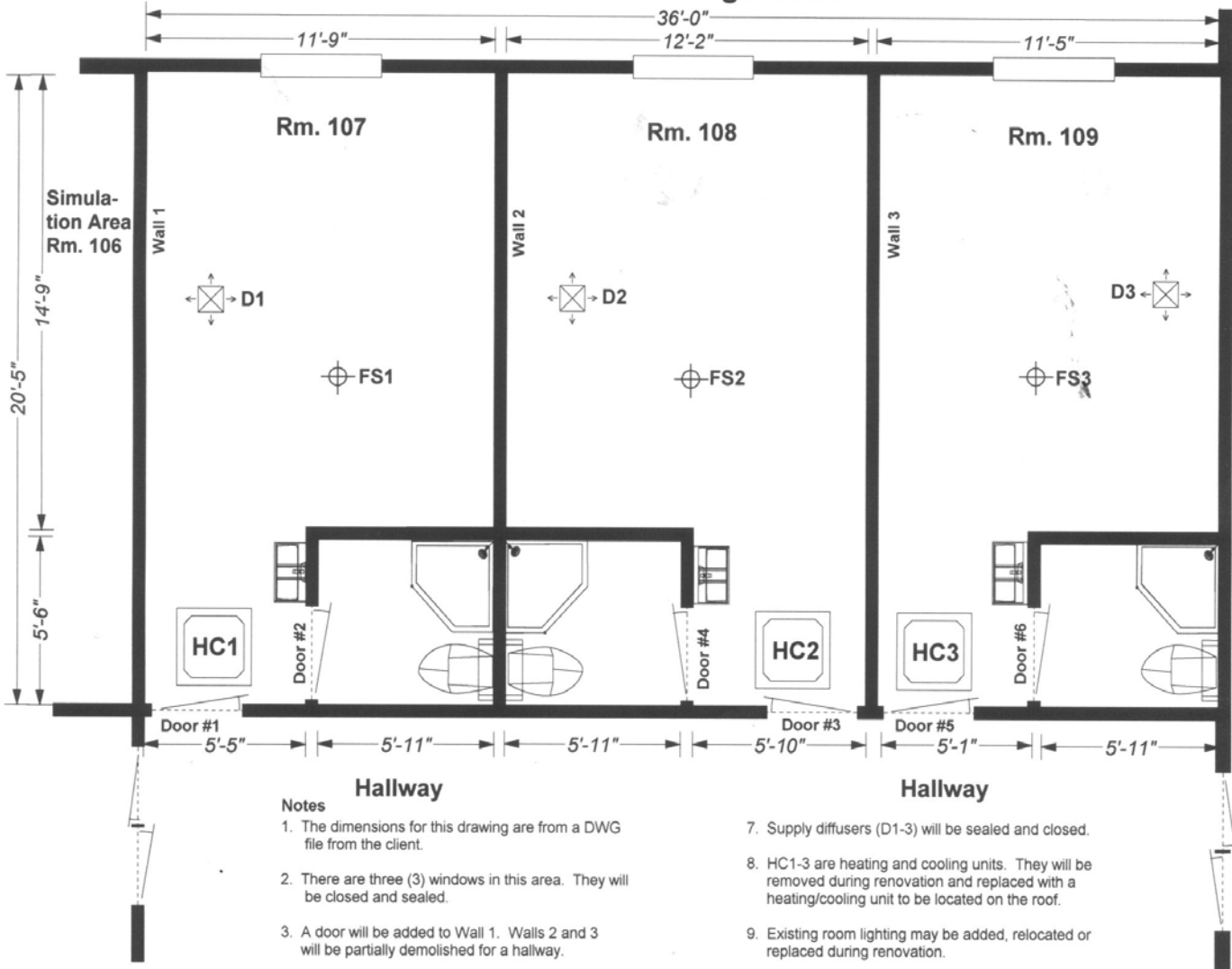
- 5.1.19 **GC – Room Pressure Monitors, Electrical** – Run 110/60/1 VAC power to the transformer in each electrical box above each monitor in **Buffer Zone 1**, **Buffer Zone 2** and the **Anteroom** and run four (4) 18 ga. wires from the wall box to the electrical box above
- 5.1.20 **AMS – APS1 Control Panel Box** – Install flush wall mounted control panel box next to the room pressure monitor in the **Anteroom**
- 5.1.21 **GC – APS1 Control Wiring, Electrical** – Run 18 ga. seven (7) shielded wire bundle from the “J” box on **APS1** to the Control Panel box in the **Anteroom**, **AMS** will terminate wiring at **APS1**
- 5.1.22 **AMS – APS1 Control Panel Box** – Terminate wires from **APS1** to the Control module
- 5.1.23 **AMS – Sealed Ceiling Panels** – Cut, when necessary, and install ceiling panels in the sealed ceiling systems in each room
- 5.1.24 **AMS – Room Pressure Monitor Sensors** – Install pressure, temperature and relative humidity sensors in the ceiling of **Buffer Zone 1**, **Buffer Zone 2** and run pitot tubes to same including the reference pressure point in Room 106
- 5.1.25 **GC – Epoxy all Covering** – All wallboard walls will be painted and then have an epoxy coating applied including **Door #3**. Client to determine color, **NA** will advise
- 5.1.26 **GC – Floor Covering** – Install flooring in all rooms in the **CSP Area** with heat welded vinyl

## 6.0 Project Tasks in Order of Execution – Commissioning

- 6.1 After installation is complete **MAS** and **AMS** will commission all elements in the **CSP Area** and will perform an initial balancing to ensure air changes and room pressures meet the USP <797> standard. Balancing by a LA licensed balancing company may be required (**NA** or **GC**)
- 6.2 **NA** and the **Client** will arrange for any inspections required.
- 6.3 **MAS** will perform in-service for the pharmacy staff, facilities personnel and other personnel the **Client** feels need this information.

Please call me if you have additions or corrections. The three (3) MAS line drawings are on the following pages.

## Slidell Memorial Hospital - Renovation Area Current Area Configuration



### Notes

1. The dimensions for this drawing are from a DWG file from the client.
2. There are three (3) windows in this area. They will be closed and sealed.
3. A door will be added to Wall 1. Walls 2 and 3 will be partially demolished for a hallway.
4. Bathroom walls and doors will be removed. All bathroom fixtures will be removed. Two (2) of the three (3) sinks will be removed.
5. The flooring in these rooms is a tiled vinyl covering. It will be replaced with a heat sealed covering.
6. The ceilings in the rooms are a standard drop ceiling at a height of 7'-11". The hard deck height is at 9'-6". The ceiling in the vestibule area is at approx. 7'-0". The ceiling will be replaced with a cleanroom sealed ceiling system.
7. Supply diffusers (D1-3) will be sealed and closed.
8. HC1-3 are heating and cooling units. They will be removed during renovation and replaced with a heating/cooling unit to be located on the roof.
9. Existing room lighting may be added, relocated or replaced during renovation.
10. Existing fire sprinklers (FS1-3) may need to be relocated and lowered during renovation. Additional sprinklers will be required to meet code.
11. Doors #1, #3 & #5 will be closed and sealed. Doors #2, #4 & #6 will be removed with walls.
12. This area is located on the first floor. The outside roof is directly above this area.

### Facility Address:

1001 Gause Blvd.  
Slidell, LA 70458

### Room 107

False Ceiling height = 7'-11"  
Hard Ceiling height = 9'-6"

Total Room Area = 208 ft.<sup>2</sup>  
Total Room Volume = 1,976 ft.<sup>3</sup>

#### To obtain minimum 35 ACH:

$1976 \text{ ft.}^3 \times 35 \text{ ACH} = 1153 \text{ CFM}$   
60 Min./hr.

(For informational purposes only.)

### Room 108

False Ceiling height = 7'-11"  
Hard Ceiling height = 9'-6"

Total Room Area = 217 ft.<sup>2</sup>  
Total Room Volume = 2,062 ft.<sup>3</sup>

#### To obtain minimum 35 ACH:

$2062 \text{ ft.}^3 \times 35 \text{ ACH} = 1203 \text{ CFM}$   
60 Min./hr.

(For informational purposes only.)

### Room 109

False Ceiling height = 7'-11"  
Hard Ceiling height = 9'-6"

Total Room Area = 201 ft.<sup>2</sup>  
Total Room Volume = 1,910 ft.<sup>3</sup>

#### To obtain minimum 35 ACH:

$1910 \text{ ft.}^3 \times 35 \text{ ACH} = 1115 \text{ CFM}$   
60 Min./hr.

(For informational purposes only.)

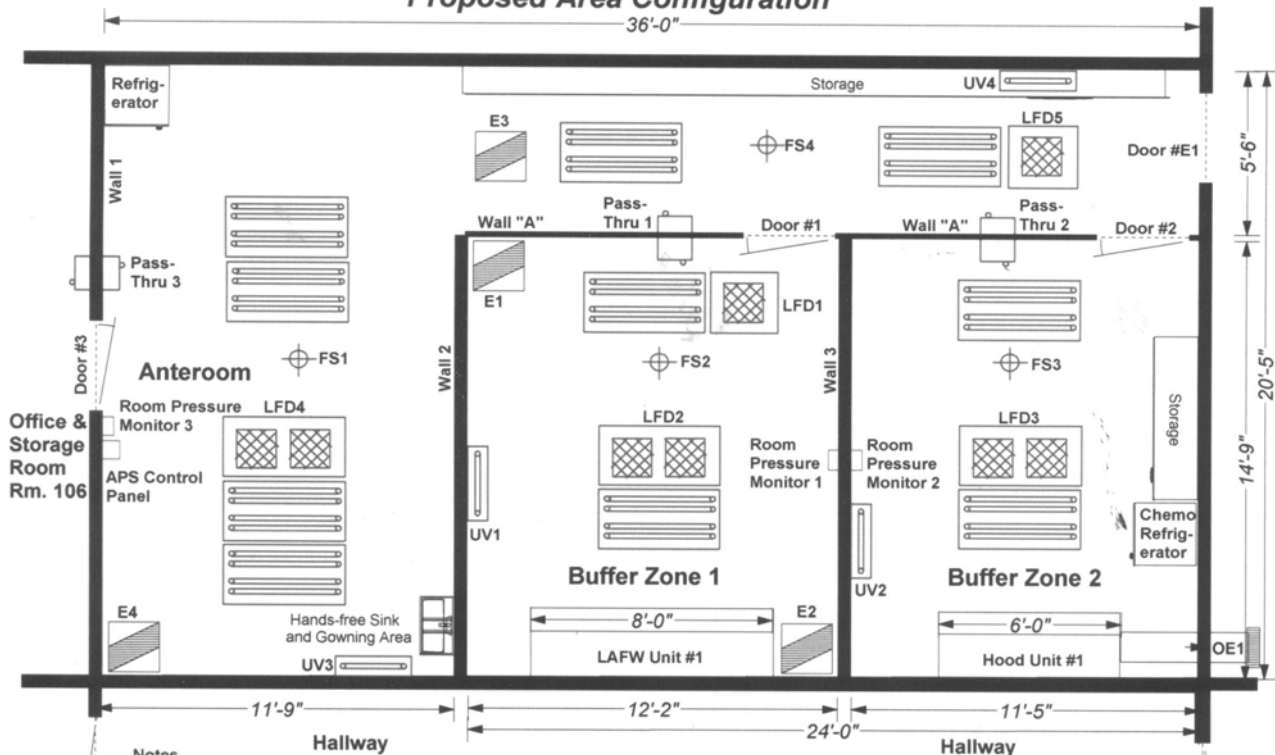
### Medical Air Solutions, LLC

#### Drawing History

Drawing P-01-24-10-1-1	Author
Original: 03/17/10	RHW
Revised:	
Revised:	
Revised:	

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## Slidell Memorial Hospital - Renovation Area Proposed Area Configuration



**Notes**

1. LAFW unit #1 is an ISO 5 CSP workstation utilizing horizontal laminar airflow system. (New unit to be purchased by client)
2. Hood unit #1 unit is an ISO 5 negative pressure workstation that exhausts air to the outside via a dedicated duct (OE1) to the roof. The hood will provide the negative pressure in Buffer Zone 2 with APS1 providing ultra-pure air. (New unit to be purchased by client)
3. APS1 is a roof HEPA air purification system capable of providing up to 2200 CFM of ultra-pure air to the CSP Area. Heating and cooling will be provided by HP1 to be installed up-stream from APS1. See drawing P-01-24-10-1-3 for HVAC details.
4. There are five (5) laminar airflow 304 SS diffuser plenums (HD1-5) providing supply air from the rooftop APS unit.
5. There are four (4) 304 SS exhaust grilles (E1-4). Exhaust air will be returned to APS1.
6. All windows in this area will be closed and sealed.
7. The flooring in this area shall have a contiguous, impervious cover installed or an epoxy coating over the existing tile applied.
8. The existing drop ceiling and hard ceiling in the area will be replaced with a cleanroom type, sealed ceiling, specifically designed for this application.
9. Room lighting may need to be relocated, replaced or added during renovation.
10. Part of walls 2 and 3 will be demolished to create a hallway to the Buffer Zones 1 and 2. Wall 2 will be 14'-9". Wall 3 will be 14'-7 1/4".
11. Door #E1 is an emergency exit that is sealed on the top, sides and bottom with a push bar on the Anteroom side and a lock on the hallway side.
12. Door #3 will be hung in Wall 1 to provide access to the created CSP Area from the Office/Storage Room.
13. Wall "A" will be a cleanroom prefab wall system with the upper half to be transparent. It will be erected to separate Buffer Zone 1 and Buffer Zone 2 from the Anteroom. All existing walls will be sealed with an epoxy coating.
14. There are four (4) fire sprinklers (FS1-FS4) denoted in this area. Additional sprinklers may be required by code (by others).
15. All existing supply diffusers (D1-D3) in Drawing 1-1 will be closed and sealed.
16. UV1, UV2, UV3 and UV4 are UVGI devices that may be located as depicted. These units cover a maximum of 240 sq. ft. each.
17. Room Pressure Monitors 1, 2 and 3 and the APS Control Panel (APS1) will be located in the general area depicted on this drawing.
18. A 32-34" ADA approved hands-free sink will be located in the approximate located indicated.
19. There are two pass-throughs (1 and 2) that may be used to pass items to and from the Buffer Zones to the Anteroom. An additional pass-through may be desired to avoid the opening of Door #3 to the Office/Storage Room (Room 106).
20. Final placement of storage units, tables, etc. will be at the client's discretion.
21. Final placement of equipment and instruments will be field determined.

**Facility Address:**

1001 Gause Blvd.  
Slidell, LA 70458

**Buffer Zone 1**

Sealed Ceiling height = 8'-0"  
Hard Ceiling height = 9'-6"

Total Room Area = 184 ft.<sup>2</sup>  
Total Room Volume = 1,472 ft.<sup>3</sup>

**To obtain minimum 35 ACH:**

$\frac{1472 \text{ ft.}^3}{60 \text{ Min./hr.}} \times 35 \text{ ACH} = 859 \text{ CFM}$

Positive offset of 300 CFM  
Offset air to be exhausted under access door.

**Buffer Zone 2**

Sealed Ceiling height = 8'-0"  
Hard Ceiling height = 9'-6"

Total Room Area = 169 ft.<sup>2</sup>  
Total Room Volume = 1,352 ft.<sup>3</sup>

**To obtain minimum 35 ACH:**

$\frac{1352 \text{ ft.}^3}{60 \text{ Min./hr.}} \times 35 \text{ ACH} = 789 \text{ CFM}$

Negative offset of 300 CFM. Offset air to be exhausted by Hood to OE1.

**Anteroom**

Sealed Ceiling height = 8'-0"  
Hard Ceiling height = 9'-6"

Total Room Area = 343 ft.<sup>2</sup>  
Total Room Volume = 2,744 ft.<sup>3</sup>

**To obtain minimum 15 ACH:**

$\frac{2744 \text{ ft.}^3}{60 \text{ Min./hr.}} \times 15 \text{ ACH} = 686 \text{ CFM}$

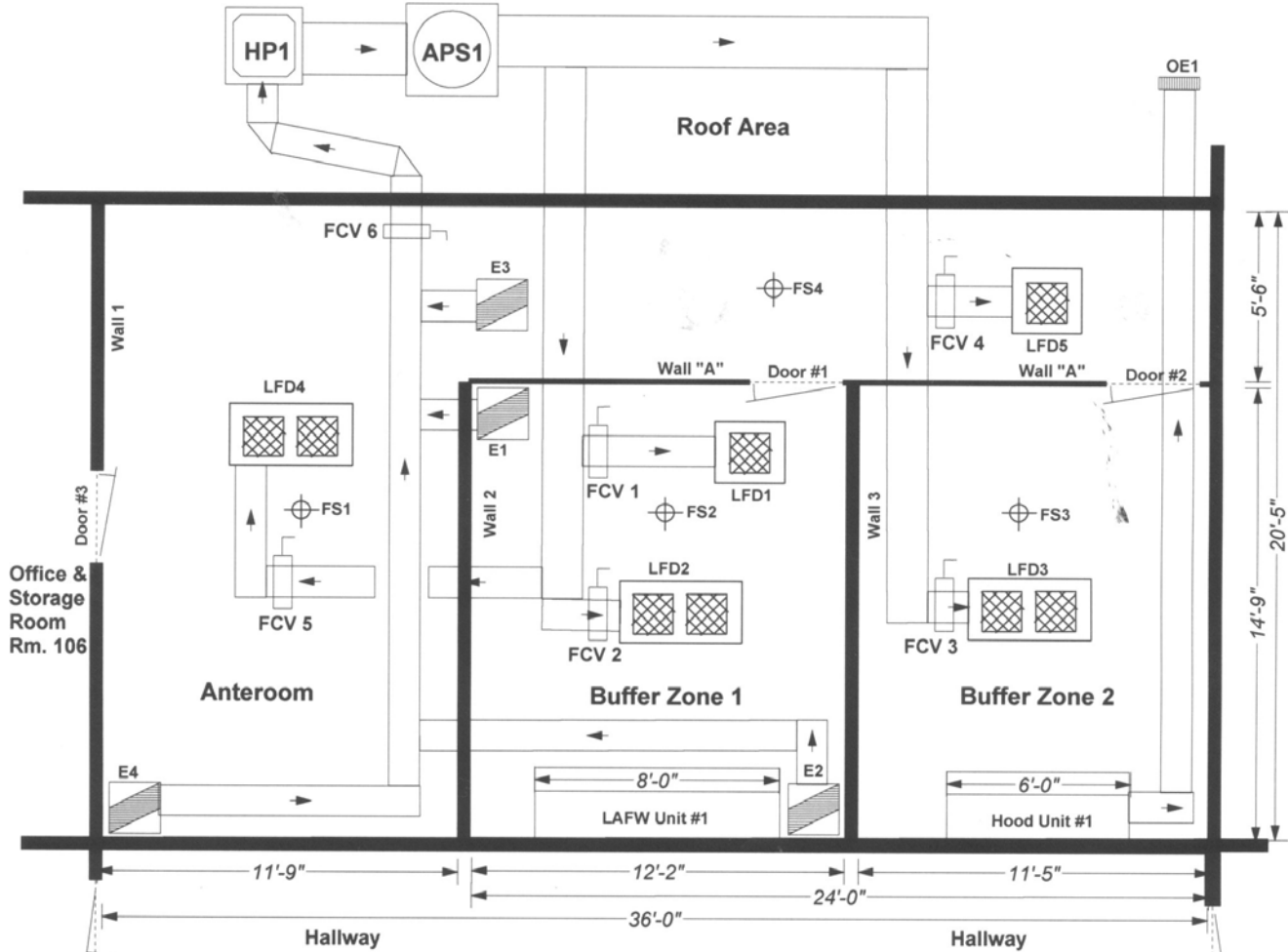
Positive offset of 200 CFM  
Offset air to be exhausted under access door.

**Medical Air Solutions, LLC**  
Drawing History

Drawing	Author
Drawing P-01-24-10-1-2	JRB
Original: 03/18/10	JRB
Revised: 7/2/10	JRB
Revised:	
Revised:	
Revised:	

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## Slidell Memorial Hospital - Renovation Area Proposed Area Configuration - HVAC



### Notes

1. APS1 is a roof air purification system capable of providing up to 2200 CFM of ultra-pure air to the CSP Area. The unit has a prefilter and 99.99% HEPA to provide ultra-pure air to the CSP Area. This is a recirculating with a fresh air intake at HP1.
2. Supply ducting to the CSP Area must be either 304 SS or anodized aluminum. Sizing of ducting will be by A&E.
3. Heating and cooling will be provided by HP1 which will be installed up-stream from APS1. Tonnage and manufacturer to be determined by A&E.
4. Diffusers and grilles and their plenums will be constructed of 304 SS.
5. The flow control dampers (FCV 1-5) will be utilized to balance the air volume into the CSP Area via the LFD diffusers. (See the CFM Schedule in the written proposal.)
6. The flow control damper (FCV 6) will be utilized to balance the air volume from the CSP Area via the exhaust grilles. (See the CFM Schedule in the written proposal.)
7. Hood unit #1 will exhaust air to the outside via a dedicated duct to OE1. MAS recommends a booster fan at the terminus of the duct run to ensure the ducting maintains a negative pressure.
8. Temperature in the CSP Area should be between 66 and 70 degrees F with the humidity between 30-50%.

<p><b>Buffer Zone 1</b> Sealed Ceiling height = 8'-0" Hard Ceiling height = 9'-6" Total Room Area = 184 ft<sup>2</sup> Total Room Volume = 1,472 ft<sup>3</sup> <b>To obtain minimum 35 ACH:</b> <math>1472 \text{ ft}^3 \times 35 \text{ ACH} = 859 \text{ CFM}</math> 60 Min./hr. <i>Positive offset of 300 CFM</i> <i>Offset air to be exhausted under access door.</i></p>	<p><b>Buffer Zone 2</b> Sealed Ceiling height = 8'-0" Hard Ceiling height = 9'-6" Total Room Area = 169 ft<sup>2</sup> Total Room Volume = 1,352 ft<sup>3</sup> <b>To obtain minimum 35 ACH:</b> <math>1352 \text{ ft}^3 \times 35 \text{ ACH} = 789 \text{ CFM}</math> 60 Min./hr. <i>Negative offset of 300 CFM. Offset air to be exhausted by Hood to OE1.</i></p>	<p><b>Anteroom</b> Sealed Ceiling height = 8'-0" Hard Ceiling height = 9'-6" Total Room Area = 343 ft<sup>2</sup> Total Room Volume = 2,744 ft<sup>3</sup> <b>To obtain minimum 15 ACH:</b> <math>2744 \text{ ft}^3 \times 15 \text{ ACH} = 686 \text{ CFM}</math> 60 Min./hr. <i>Positive offset of 200 CFM</i> <i>Offset air to be exhausted under access door.</i></p>
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### Facility Address:

1001 Gause Blvd.  
Slidell, LA 70458

### Medical Air Solutions, LLC

Drawing History

Drawing P-01-24-10-1-3	Author
Original: 03/18/10	RHW
Revised:	
Revised:	
Revised:	
Revised:	