MIAMI-DADE COUNTY

Permitting, Environment and Regulatory Affairs
Herbert S. Saffir Permitting and Inspection Center
11805 SW 26th Street
Miami, Florida 33175-2474
786-315-2100

miamidade.gov

REQUESTED REVIEWS

☐ ALL ☐ BLDG ☐ DERM ☐ ELEC ☐ ENRG ☐ FIRE
☐ HCAP ☐ LANDSCAPING ☒ MECH ☐ PLUM ☐ PWKS ☐ PWCC
☐ ROOF ☐ SIGN ☐ STRU ☐ ZNPR ☐ WASD
☐ PERMIT BY AFFIDAVIT CHECK ☐ SHORT TERM EVENT AFFIDAVIT CHECK ☐ OPTIONAL PLAN REVIEW
☐ BLDG ☐ ELEC ☐ MECH ☐ PLUM ☐ STRU

C2013006253

Dear Applicant:

Please complete the following information for notification on the status of your plans.

Applicant's First Name: (PRINT CLEARLY) EMILIANO Last Name: (PRINT CLEARLY) OROZCO

Cellular Number: 786-715-7125 Office/Home Number: _____

EMAIL Address: _____

Comments:

NOTE: IF AN EMAIL ADDRESS WAS PROVIDED YOU WILL BE NOTIFIED VIA EMAIL AND/OR AUTOMATIC TELEPHONE CALL CONCERNING THE STATUS OF YOUR PLANS

-FOR OFFICE USE ONLY-

TO BE COMPLETED BY BUILDING AND OCCUPANCY REPRESENTATIVE OR PLANS PROCESSING SPECIALIST:

Application Date: ___/___/___ Clerk Name: _____ Arrival Time: ____:____

Process No(s): _____ / _____ / _____

_____ / _____ / _____

☐ Walk-Thru ☐ Drop-Off ☐ Rework ☐ Re-Issue
☐ Residential ☐ Commercial ☐ Plan Revision ☐ Shop Drawing

TO BE COMPLETED BY BUILDING AND OCCUPANCY REPRESENTATIVE OR PLANS PROCESSING SPECIALIST:

BLDG ☐A ☐D ☐N	HCAP ☐A ☐D ☐N	ROOF ☐A ☐D ☐N
DERM ☐A ☐D ☐N	LAND ☐A ☐D ☐N	SIGN ☐A ☐D ☐N
ELEC ☐A ☐D ☐N	MECH ☐A ☐D ☐N	STRU ☐A ☐D ☐N
ENRG ☐A ☐D ☐N	PLUM ☐A ☐D ☐N	ZNPR ☐A ☐D ☐N
FIRE ☐A ☐D ☐N	WASD ☐A ☐D ☐N	HRS ☐A ☐D ☐N

Customer Notified By: _____ Date: ____/____/____ Time: ____:____

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Examiner	Date Time Stamp	Disp.	Trade	Stamp Name
John Ariton	12/24/2012 12:13:42 PM	A	MECH	Approved

Air System Sizing Summary for AHU-2

Project Name: Animal Clinic-Sys2
Prepared by: Emiliano Orozco

12/11/2012
10:52AM

Air System Information

Air System Name	AHU-2		Number of zones	1	
Equipment Class	SPLT AHU		Floor Area	420.0	ft²
Air System Type	SZCAV		Location	Miami IAP, Florida	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	Sum of space airflow rates	Calculation Months	Jan to Dec
Space CFM	Individual peak space loads	Sizing Data	Calculated

Central Cooling Coil Sizing Data

Total coil load	2.4	Tons	Load occurs at	Jul 1400	
Total coil load	28.5	MBH	OA DB / WB	90.7 / 76.9	°F
Sensible coil load	18.2	MBH	Entering DB / WB	83.8 / 71.7	°F
Coil CFM at Jul 1400	759	CFM	Leaving DB / WB	61.6 / 60.5	°F
Max block CFM	759	CFM	Coil ADP	59.1	°F
Sum of peak zone CFM	759	CFM	Bypass Factor	0.100	
Sensible heat ratio	0.639		Resulting RH	55	%
ft²/Ton	176.6		Design supply temp.	58.0	°F
BTU/(hr-ft²)	67.9		Zone T-stat Check	1 of 1	OK
Water flow @ 10.0 °F rise	N/A		Max zone temperature deviation	0.0	°F

Central Heating Coil Sizing Data

Max coil load	15.7	MBH	Load occurs at	Des Htg	
Coil CFM at Des Htg	759	CFM	BTU/(hr-ft²)	37.3	
Max coil CFM	759	CFM	Ent. DB / Lvg DB	58.0 / 77.1	°F
Water flow @ 20.0 °F drop	N/A				

Supply Fan Sizing Data

Actual max CFM	759	CFM	Fan motor BHP	0.00	BHP
Standard CFM	759	CFM	Fan motor kW	0.00	kW
Actual max CFM/ft²	1.81	CFM/ft²	Fan static	0.00	in wg

Outdoor Ventilation Air Data

Design airflow CFM	375	CFM	CFM/person	0.00	CFM/person
CFM/ft²	0.89	CFM/ft²			

Permit Records Section
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Date 12/11/12

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John Ariton	12/24/2012 12:13:42 PM	A	MECH	Approved

Zone Sizing Summary for AHU-2

Project Name: Animal Clinic-Sys2
Prepared by: Emiliano Orozco

12/11/2012
10:53AM

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Air System Information

Air System Name AHU-2
Equipment Class ..... SPLT AHU
Air System Type ..... SZCAV

Number of zones 1
Floor Area ..... 420.0 ft²
Location ..... Miami IAP, Florida

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM ..... Sum of space airflow rates
Space CFM ..... Individual peak space loads

Calculation Months ..... Jan to Dec
Sizing Data ..... Calculated

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Air Flow (CFM)	Minimum Air Flow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft²)	Zone CFM/ft²
Zone 1	13.9	759	759	Jul 1400	6.2	420.0	1.81

Zone Terminal Sizing Data

No Zone Terminal Sizing Data required for this system.

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
AHU-2	1	13.9	Jul 1400	759	6.2	420.0	1.81

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Air System Design Load Summary for AHU-2

Project Name: Animal Clinic-Sys2
Prepared by: Emiliano Orozco

12/11/2012
10:53AM

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	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1400 COOLING OA DB / WB 90.7 °F / 76.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 46.0 °F / 38.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	96 ft²	4080	-	96 ft²	-	-
Wall Transmission	472 ft²	2554	-	472 ft²	2492	-
Roof Transmission	420 ft²	1153	-	420 ft²	392	-
Window Transmission	96 ft²	1409	-	96 ft²	2488	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	42 ft²	1668	-	42 ft²	864	-
Floor Transmission	420 ft²	0	-	420 ft²	0	-
Partitions	400 ft²	0	-	400 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	840 W	2866	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	0	0	0	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	200	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**13930**	**0**	**-**	**6236**	**0**
Zone Conditioning	-	12787	0	-	6081	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	759 CFM	0	-	759 CFM	0	-
Ventilation Load	375 CFM	5462	10288	375 CFM	9581	0
Supply Fan Load	759 CFM	0	-	759 CFM	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**18249**	**10288**	**-**	**15661**	**0**
Central Cooling Coil	-	18249	10289	-	0	0
Central Heating Coil	-	0	-	-	15661	-
>> Total Conditioning	**-**	**18249**	**10289**	**-**	**15661**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

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System Psychrometrics for AHU-2

Project Name: Animal Clinic-Sys2
Prepared by: Emiliano Orozco

12/11/2012
10:53AM

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July DESIGN COOLING DAY, 1400

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	90.7	0.01678	375	400	5462	10288
Vent - Return Mixing	Outlet	83.8	0.01385	759	407	-	-
Central Cooling Coil	Outlet	61.6	0.01100	759	407	18249	10289
Central Heating Coil	Outlet	61.6	0.01100	759	407	0	-
Supply Fan	Outlet	61.6	0.01100	759	407	0	-
Cold Supply Duct	Outlet	61.6	0.01100	759	407	-	-
Zone Air	-	77.2	0.01100	759	413	12787	0
Return Plenum	Outlet	77.2	0.01100	759	413	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4744.4 BTU/(hr-CFM)
Site Altitude = 13.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	13930	Cooling	12787	77.2	759	413	0	0

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System Psychrometrics for AHU-2

Project Name: Animal Clinic-Sys2
Prepared by: Emiliano Orozco

12/11/2012
10:53AM

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WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	46.0	0.00325	375	400	-9581	0
Vent - Return Mixing	Outlet	58.0	0.00325	759	407	-	-
Central Cooling Coil	Outlet	58.0	0.00325	759	407	0	0
Central Heating Coil	Outlet	77.1	0.00325	759	407	15661	-
Supply Fan	Outlet	77.1	0.00325	759	407	0	-
Cold Supply Duct	Outlet	77.1	0.00325	759	407	-	-
Zone Air	-	69.7	0.00325	759	413	-6081	0
Return Plenum	Outlet	69.7	0.00325	759	413	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4744.4 BTU/(hr-CFM)
Site Altitude = 13.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-6236	Heating	-6081	69.7	759	413	0	0

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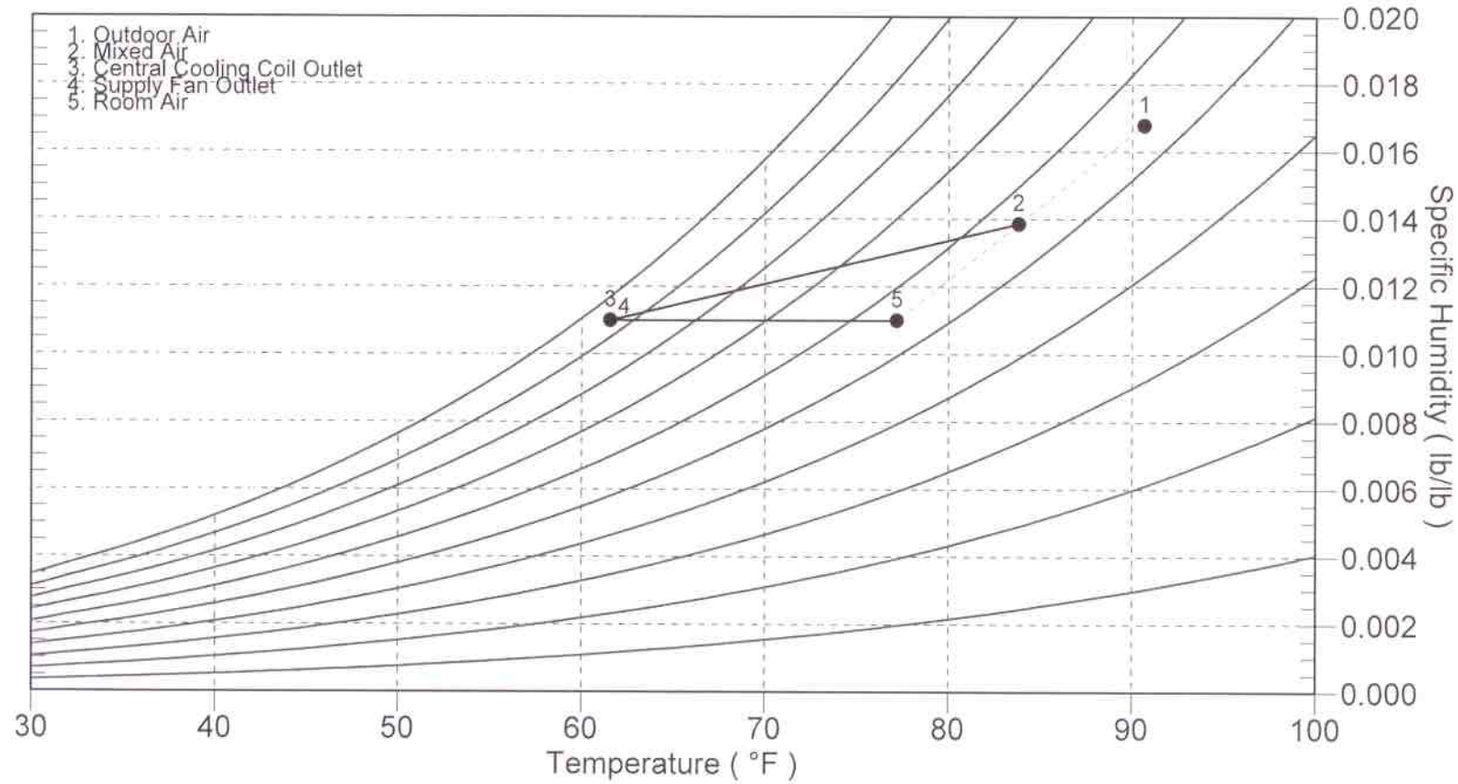
Psychrometric Analysis for AHU-2

Project Name: Animal Clinic-Sys2
Prepared by: Emiliano Orozco

12/11/2012
10:53AM

Location: Miami IAP, Florida
Altitude: 13.0 ft.
Data for: July DESIGN COOLING DAY, 1400



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Air System Sizing Summary for AHU-1

Project Name: Animal Clinic
Prepared by: Emiliano Orozco

12/11/2012
10:55AM

Air System Information

Air System Name	AHU-1		Number of zones	1	
Equipment Class	SPLT AHU		Floor Area	1180.0	ft²
Air System Type	SZCAV		Location	Miami IAP, Florida	

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM	Sum of space airflow rates	Calculation Months	Jan to Dec
Space CFM	Individual peak space loads	Sizing Data	Calculated

Central Cooling Coil Sizing Data

Total coil load	3.3	Tons	Load occurs at	Aug 1600	
Total coil load	39.5	MBH	OA DB / WB	90.7 / 76.9	°F
Sensible coil load	26.7	MBH	Entering DB / WB	81.6 / 70.1	°F
Coil CFM at Aug 1600	1219	CFM	Leaving DB / WB	61.3 / 60.3	°F
Max block CFM	1219	CFM	Coil ADP	59.0	°F
Sum of peak zone CFM	1219	CFM	Bypass Factor	0.100	
Sensible heat ratio	0.674		Resulting RH	57	%
ft²/Ton	358.2		Design supply temp.	58.0	°F
BTU/(hr-ft²)	33.5		Zone T-stat Check	1 of 1	OK
Water flow @ 10.0 °F rise	N/A		Max zone temperature deviation	0.0	°F

Central Heating Coil Sizing Data

Max coil load	16.6	MBH	Load occurs at	Des Htg	
Coil CFM at Des Htg	1219	CFM	BTU/(hr-ft²)	14.1	
Max coil CFM	1219	CFM	Ent. DB / Lvg DB	62.1 / 74.7	°F
Water flow @ 20.0 °F drop	N/A				

Supply Fan Sizing Data

Actual max CFM	1219	CFM	Fan motor BHP	0.00	BHP
Standard CFM	1218	CFM	Fan motor kW	0.00	kW
Actual max CFM/ft²	1.03	CFM/ft²	Fan static	0.00	in wg

Outdoor Ventilation Air Data

Design airflow CFM	396	CFM	CFM/person	66.00	CFM/person
CFM/ft²	0.34	CFM/ft²			

12-10-12

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Zone Sizing Summary for AHU-1

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Project Name: Animal Clinic
Prepared by: Emiliano Orozco

12/11/2012
10:55AM

Air System Information

Air System Name AHU-1
Equipment Class ..... SPLT AHU
Air System Type ..... SZCAV

Number of zones 1
Floor Area ..... 1180.0 ft²
Location ..... Miami IAP, Florida

Sizing Calculation Information

Zone and Space Sizing Method:

Zone CFM ..... Sum of space airflow rates
Space CFM ..... Individual peak space loads

Calculation Months ..... Jan to Dec
Sizing Data ..... Calculated

Zone Sizing Data

Zone Name	Maximum Cooling Sensible (MBH)	Design Air Flow (CFM)	Minimum Air Flow (CFM)	Time of Peak Load	Maximum Heating Load (MBH)	Zone Floor Area (ft²)	Zone CFM/ft²
Zone 1	22.4	1219	1219	Aug 1700	6.4	1180.0	1.03

Zone Terminal Sizing Data

No Zone Terminal Sizing Data required for this system.

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
Zone 1							
AHU-1	1	22.4	Aug 1700	1219	6.4	1180.0	1.03

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Air System Design Load Summary for AHU-1

Project Name: Animal Clinic
Prepared by: Emiliano Orozco

12/11/2012
10:55AM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Aug 1600 COOLING OA DB / WB 90.7 °F / 76.9 °F			HEATING DATA AT DES HTG HEATING OA DB / WB 46.0 °F / 38.6 °F		
ZONE LOADS	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**	**Details**	**Sensible (BTU/hr)**	**Latent (BTU/hr)**
Window & Skylight Solar Loads	0 ft²	0	-	0 ft²	-	-
Wall Transmission	979 ft²	5198	-	979 ft²	5169	-
Roof Transmission	1180 ft²	2912	-	1180 ft²	1101	-
Window Transmission	0 ft²	0	-	0 ft²	0	-
Skylight Transmission	0 ft²	0	-	0 ft²	0	-
Door Loads	21 ft²	87	-	21 ft²	151	-
Floor Transmission	1180 ft²	0	-	1180 ft²	0	-
Partitions	400 ft²	0	-	400 ft²	0	-
Ceiling	0 ft²	0	-	0 ft²	0	-
Overhead Lighting	3540 W	12078	-	0	0	-
Task Lighting	0 W	0	-	0	0	-
Electric Equipment	0 W	0	-	0	0	-
People	6	1770	2730	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	200	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	**-**	**22246**	**2730**	**-**	**6421**	**0**
Zone Conditioning	-	20906	2730	-	6446	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1219 CFM	0	-	1219 CFM	0	-
Ventilation Load	396 CFM	5756	10135	396 CFM	10171	0
Supply Fan Load	1219 CFM	0	-	1219 CFM	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	**-**	**26661**	**12865**	**-**	**16617**	**0**
Central Cooling Coil	-	26661	12867	-	0	0
Central Heating Coil	-	0	-	-	16617	-
>> Total Conditioning	**-**	**26661**	**12867**	**-**	**16617**	**0**
Key:	**Positive values are clg loads Negative values are htg loads**			**Positive values are htg loads Negative values are clg loads**		

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System Psychrometrics for AHU-1

Project Name: Animal Clinic
Prepared by: Emiliano Orozco

12/11/2012
10:55AM

August DESIGN COOLING DAY, 1600

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	90.7	0.01678	396	400	5756	10135
Vent - Return Mixing	Outlet	81.6	0.01314	1219	623	-	-
Central Cooling Coil	Outlet	61.3	0.01091	1219	623	26661	12867
Central Heating Coil	Outlet	61.3	0.01091	1219	623	0	-
Supply Fan	Outlet	61.3	0.01091	1219	623	0	-
Cold Supply Duct	Outlet	61.3	0.01091	1219	623	-	-
Zone Air	-	77.2	0.01138	1219	730	20906	2730
Return Plenum	Outlet	77.2	0.01138	1219	730	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4744.4 BTU/(hr-CFM)
Site Altitude = 13.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	22246	Cooling	20906	77.2	1219	730	0	0

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System Psychrometrics for AHU-1

Project Name: Animal Clinic
Prepared by: Emiliano Orozco

12/11/2012
10:55AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (°F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	46.0	0.00325	396	400	-10171	0
Vent - Return Mixing	Outlet	62.1	0.00325	1219	417	-	-
Central Cooling Coil	Outlet	62.1	0.00325	1219	417	0	0
Central Heating Coil	Outlet	74.7	0.00325	1219	417	16617	-
Supply Fan	Outlet	74.7	0.00325	1219	417	0	-
Cold Supply Duct	Outlet	74.7	0.00325	1219	417	-	-
Zone Air	-	69.8	0.00325	1219	426	-6446	0
Return Plenum	Outlet	69.8	0.00325	1219	426	0	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4744.4 BTU/(hr-CFM)
Site Altitude = 13.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (°F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
Zone 1	-6421	Heating	-6446	69.8	1219	426	0	0

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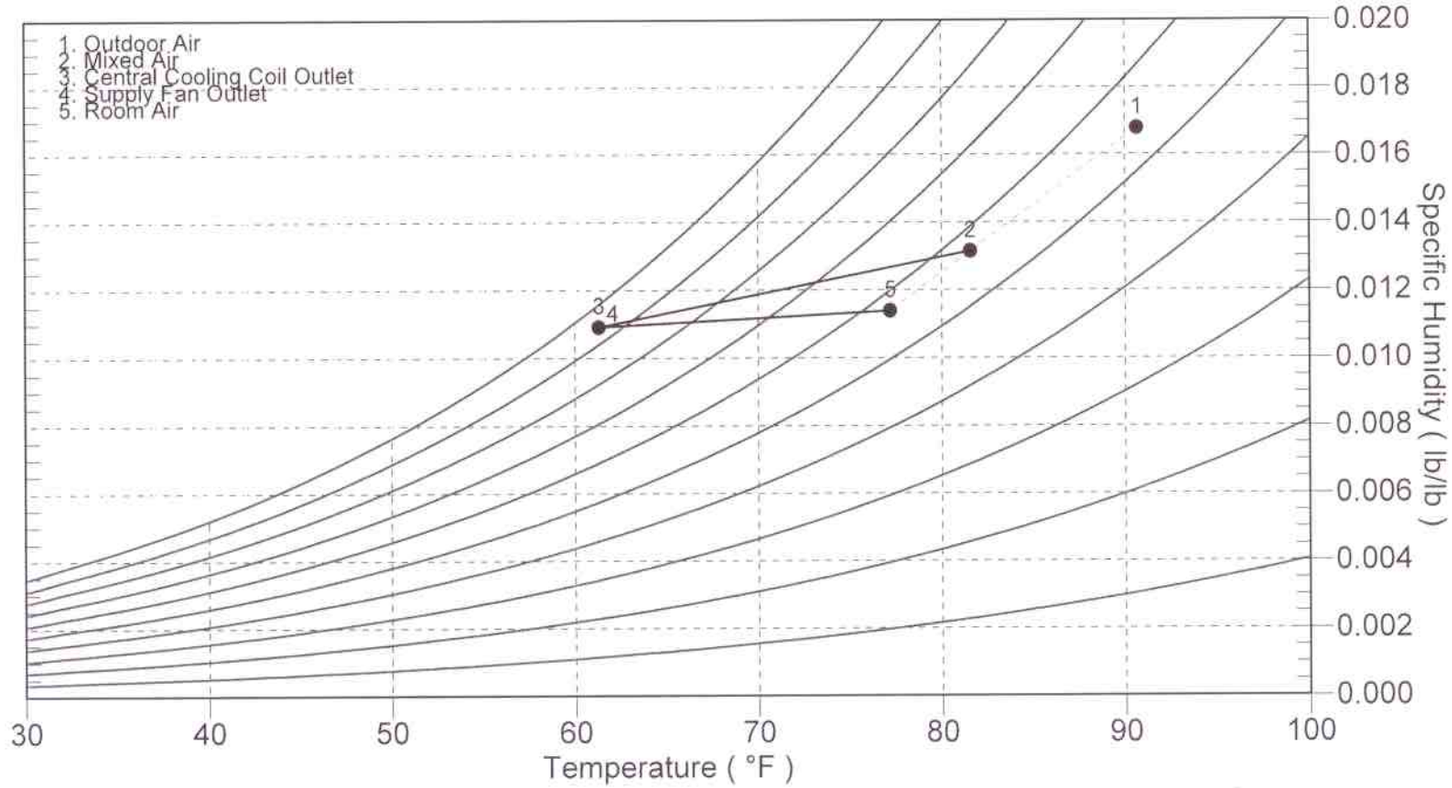
Examiner Date Time Stamp Disp. Trade Stamp Name
John Ariton 12/24/2012 12:13:42 PM A MECH Approved

Psychrometric Analysis for AHU-1

Project Name: Animal Clinic
Prepared by: Emiliano Orozco

12/11/2012
10:55AM

Location: Miami IAP, Florida
Altitude: 13.0 ft.
Data for: August DESIGN COOLING DAY, 1600



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