65631

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Project Summary
Entire House

Job: J-11120 - C-1635
Date: Aug 29, 2024
By: LaNiika Stewart

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Project Information

For: Jairo Aguledo
312 SW Hammock Hill Circle, Lake County, FL 32034

Notes:

Columbia County Building Department
Reviewed for
File Copy
Code Compliance
Plans Examiner

Design Information

Weather: Gainesville, FL, US

Winter Design Conditions

Outside db	33	°F
Inside db	70	°F
Design TD	37	°F
Ventilation Method	MJ8	

Summer Design Conditions

Outside db	92	°F
Inside db	75	°F
Design TD	17	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	43	gr/lb

Heating Summary

Structure	16896	Btuh
Ducts (R-6.0)	3421	Btuh
Central vent (0 cfm)	0	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	20317	Btuh

Sensible Cooling Equipment Load Sizing

Structure	13442	Btuh
Ducts (R-6.0)	4760	Btuh
Central vent (0 cfm)	0	Btuh
Blower	0	Btuh
Use manufacturer's data	y	
Rate/swing multiplier	1.00	
Equipment sensible load	18202	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	1100	1100
Volume (ft³)	10354	10354
Air changes/hour	0.45	0.23
Equiv. AVF (cfm)	78	40

Latent Cooling Equipment Load Sizing

Structure	1968	Btuh
Ducts	972	Btuh
Central vent (0 cfm)	0	Btuh
Equipment latent load	2940	Btuh
Equipment Total Load (Sen+Lat)	21142	Btuh
Req. total capacity at 0.80 SHR	1.9	ton

Heating Equipment Summary

Make	Daikin
Trade	DAIKIN
Model	DZ6VSA3010A
AHRI ref	210791258

Efficiency	8.2 HSPF2	
Heating input		
Heating output	22800	Btuh @ 47°F
Temperature rise	25	°F
Actual air flow	833	cfm
Air flow factor	0.041	cfm/Btuh
Static pressure	0.53	in H2O

Space thermostat
Capacity balance point = 28 °F

Backup:
Input = 6 kW, Output = 19703 Btuh, 100 AFUE

Cooling Equipment Summary

Make	Daikin
Trade	DAIKIN
Cond	DZ6VSA3010A
Coil	DV35FECC14A
AHRI ref	210791258

Efficiency	9.9 EER2,17.1 SEER2	
Sensible cooling	20000	Btuh
Latent cooling	5000	Btuh
Total cooling	25000	Btuh
Actual air flow	833	cfm
Air flow factor	0.046	cfm/Btuh
Static pressure	0.53	in H2O
Load sensible heat ratio	0.86	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

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Manual S Compliance Report

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Cooling Equipment

Design Conditions

Outdoor design DB:	92.4°F	Sensible gain:	18202	Btuh	Entering coil DB:	77.6°F
Outdoor design WB:	75.8°F	Latent gain:	2940	Btuh	Entering coil WB:	63.7°F
Indoor design DB:	75.0°F	Total gain:	21142	Btuh		
Indoor RH:	50%	Estimated airflow:	833	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Daikin			Model:	DZ6VSA3010A+DV35FECC14A
Actual airflow:	833	cfm			
Sensible capacity:	19900	Btuh	109% of load		
Latent capacity:	4331	Btuh	147% of load		
Total capacity:	24231	Btuh	115% of load	SHR:	82%

Heating Equipment

Design Conditions

Outdoor design DB:	33.3°F	Heat loss:	20317	Btuh	Entering coil DB:	68.7°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP						
Manufacturer:	Daikin				Model:	DZ6VSA3010A+DV35FECC14A	
Actual airflow:	833	cfm					
Output capacity:	22283	Btuh	110% of load		Capacity balance:	28	°F
Supplemental heat required:	0	Btuh			Economic balance:	-99	°F

Backup equipment type:	Elec strip						
Manufacturer:				Model:			
Actual airflow:	833	cfm					
Output capacity:	5.8	kW	97% of load	Temp. rise:	50	°F	

Meets all requirements of ACCA Manual S.

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Duct System Summary

Entire House

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	Heating	Cooling
External static pressure	0.53 in H2O	0.53 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.53 in H2O	0.53 in H2O
Supply / return available pressure	0.444 / 0.086 in H2O	0.444 / 0.086 in H2O
Lowest friction rate	0.219 in/100ft	0.219 in/100ft
Actual air flow	833 cfm	833 cfm
Total effective length (TEL)	242 ft	

Supply Branch Detail Table

Name		Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
Bath 2	c	94	2	4	0.251	4.0	0x 0	VlFx	6.7	170.0	st1
Bed 2	h	4316	177	93	0.225	8.0	0x 0	VlFx	22.6	175.0	st1
Bed 3	h	1939	80	63	0.225	6.0	0x 0	VlFx	17.5	180.0	st1A
Great Room	c	3483	123	159	0.224	7.0	0x 0	VlFx	28.0	170.0	st1A
Great Room-A	c	3483	123	159	0.219	7.0	0x 0	VlFx	13.0	190.0	st1A
Kitchen	c	4433	128	203	0.219	8.0	0x 0	VlFx	33.0	170.0	st1A
M Bath	h	1226	50	37	0.291	4.0	0x 0	VlFx	12.5	140.0	st1
Master	h	3660	150	115	0.333	7.0	0x 0	VlFx	8.5	125.0	st1

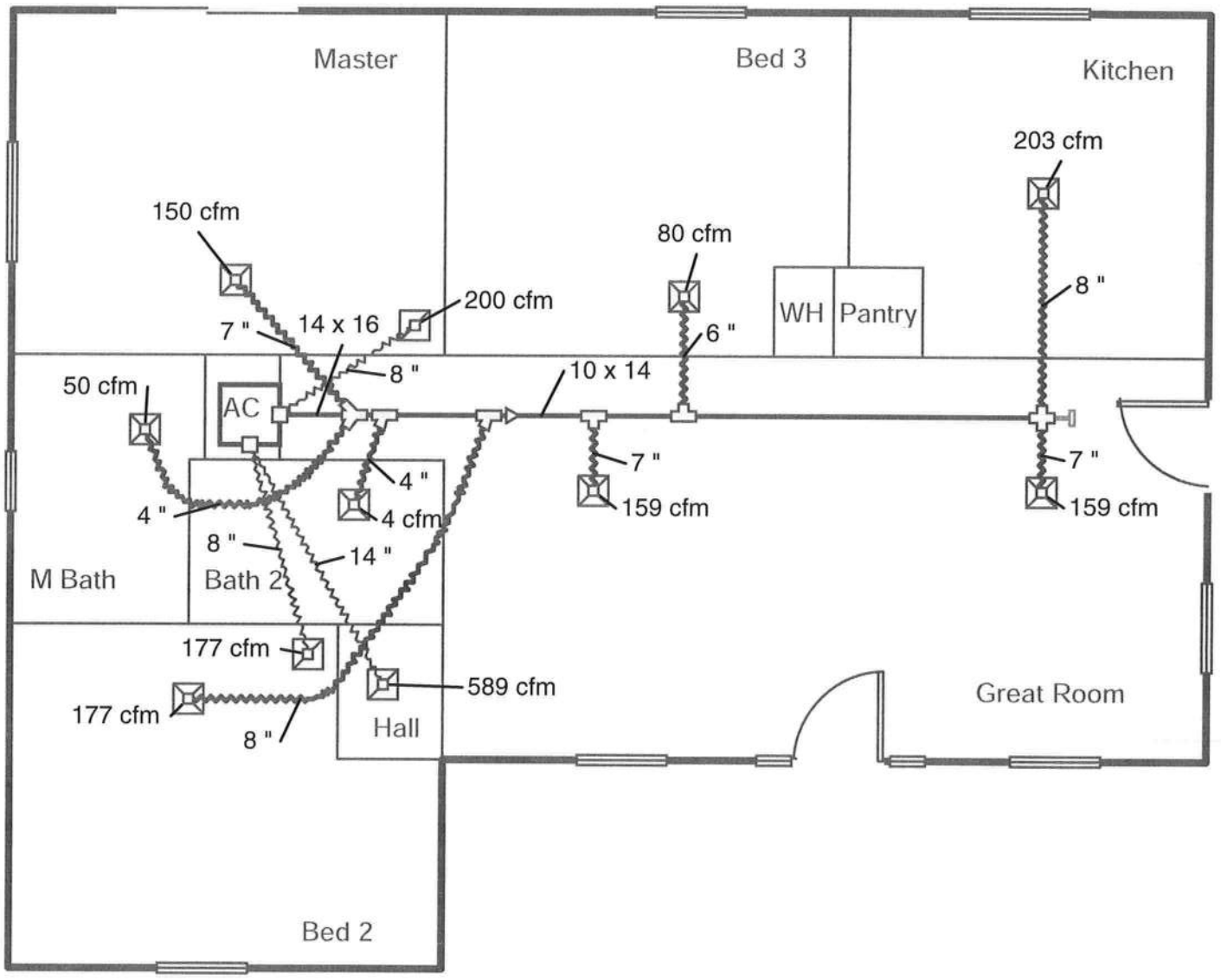
Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1A	Peak AVF	453	584	0.219	601	10.1	14 x 10	RectFbg	st1
st1	Peak AVF	833	833	0.219	536	11.6	16 x 14	RectFbg	

Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb2	0x 0	177	93	37.3	0.230	507	8.0	0x 0		VIFx	
rb3	0x 0	456	589	39.2	0.219	551	14.0	0x 0		VIFx	
rb1	0x 0	200	152	35.4	0.242	574	8.0	0x 0		VIFx	

Duct Layout



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Performed by LaNiika Stewart for:
Jairo Aguledo
312 SW Hammock Hill Circle
Lake County, FL 32034

Scale: 1 : 67

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