



Manual S Compliance Report

Entire House

Bounds Heating and Air

Job:
Date: Jun 10, 2020
By: Josh Legler

25645 West Newberry Road, Newberry, FL 32669 Phone: 352-472-2761 Fax: 352-472-1809 Email: jlegler@boundshvac.com Web: www.boundshvac.com

Project Information

For: Ponder, Amira

Cooling Equipment

Design Conditions

Outdoor design DB:	92.0°F	Sensible gain:	14841	Btuh	Entering coil DB:	76.5°F
Outdoor design WB:	76.0°F	Latent gain:	2730	Btuh	Entering coil WB:	63.2°F
Indoor design DB:	75.0°F	Total gain:	17571	Btuh		
Indoor RH:	50%	Estimated airflow:	800	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Carrier	Model:	CH17NA0240G0B0+FV4CNF002L	
Actual airflow:	800	cfm		
Sensible capacity:	18022	Btuh	121% of load	
Latent capacity:	4139	Btuh	152% of load	
Total capacity:	22161	Btuh	126% of load	SHR: 81%

Heating Equipment

Design Conditions

Outdoor design DB:	33.0°F	Heat loss:	21166	Btuh	Entering coil DB:	69.3°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Carrier	Model:	CH17NA0240G0B0+FV4CNF002L	
Actual airflow:	800	cfm		
Output capacity:	19885	Btuh	94% of load	Capacity balance: 28 °F
Supplemental heat required:	1281	Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip			
Manufacturer:		Model:		
Actual airflow:	800	cfm		
Output capacity:	0	kW	0% of load	Temp. rise: 0 °F

Meets all requirements of ACCA Manual S.



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Load Short Form

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Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	33	92	Method	Simplified
Inside db (°F)	70	75	Construction quality	Semi-tight
Design TD (°F)	37	17	Fireplaces	0
Daily range	-	M		
Inside humidity (%)	30	50		
Moisture difference (gr/lb)	11	45		

HEATING EQUIPMENT

Make Carrier
Trade CARRIER
Model CH17NA0240G0B0
AHRI ref 10467667

Efficiency 9 HSPF
Heating input
Heating output 25000 Btuh @ 47°F
Temperature rise 29 °F
Actual air flow 800 cfm
Air flow factor 0.038 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 28 °F

Backup:
Input = 0 kW, Output = 0 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Carrier
Trade CARRIER
Cond CH17NA0240G0B0
Coil FV4CNF002L
AHRI ref 10467667

Efficiency 13.0 EER, 17 SEER
Sensible cooling 16800 Btuh
Latent cooling 7200 Btuh
Total cooling 24000 Btuh
Actual air flow 800 cfm
Air flow factor 0.054 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.84

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
office	47	1451	767	55	41
laundry	68	1723	1345	65	72
kitchen/living	728	8253	7155	312	386
bath	58	107	144	4	8
bedroom 2	139	2206	1272	83	69
master bedroom	180	3207	2144	121	116
wic a	25	0	0	0	0
wic b	24	0	0	0	0
master bath	107	1540	591	58	32
hall	49	0	0	0	0
bedroom 3	153	2678	1424	101	77
ah	15	0	0	0	0

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



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Entire House	d	1593	21166	14841	800	800
Other equip loads			0	0		
Equip. @ 0.97 RSM				14396		
Latent cooling				2730		
TOTALS		1593	21166	17126	800	800

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Project Information

For: Ponder, Amira

Notes:

Design Information

Weather: Gainesville Regional AP, FL, US

Winter Design Conditions

Outside db	33 °F
Inside db	70 °F
Design TD	37 °F

Summer Design Conditions

Outside db	92 °F
Inside db	75 °F
Design TD	17 °F
Daily range	M
Relative humidity	50 %
Moisture difference	45 gr/lb

Heating Summary

Structure	17627 Btuh
Ducts	3539 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	21166 Btuh

Sensible Cooling Equipment Load Sizing

Structure	10446 Btuh
Ducts	4396 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	14396 Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	2027 Btuh
Ducts	702 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Equipment latent load	2730 Btuh

	Heating	Cooling
Area (ft ²)	1593	1593
Volume (ft ³)	14335	14335
Air changes/hour	0.26	0.14
Equiv. AVF (cfm)	62	33

Equipment Total Load (Sen+Lat)	17126 Btuh
Req. total capacity at 0.70 SHR	1.7 ton

Heating Equipment Summary

Make	Carrier
Trade	CARRIER
Model	CH17NA0240G0B0
AHRI ref	10467667
Efficiency	9 HSPF
Heating input	
Heating output	25000 Btuh @ 47°F
Temperature rise	29 °F
Actual air flow	800 cfm
Air flow factor	0.038 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 28 °F	
Backup:	
Input = 0 kW, Output = 0 Btuh, 100 AFUE	

Cooling Equipment Summary

Make	Carrier
Trade	CARRIER
Cond	CH17NA0240G0B0
Coil	FV4CNF002L
AHRI ref	10467667
Efficiency	13.0 EER, 17 SEER
Sensible cooling	16800 Btuh
Latent cooling	7200 Btuh
Total cooling	24000 Btuh
Actual air flow	800 cfm
Air flow factor	0.054 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.84

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



Wrightsoft

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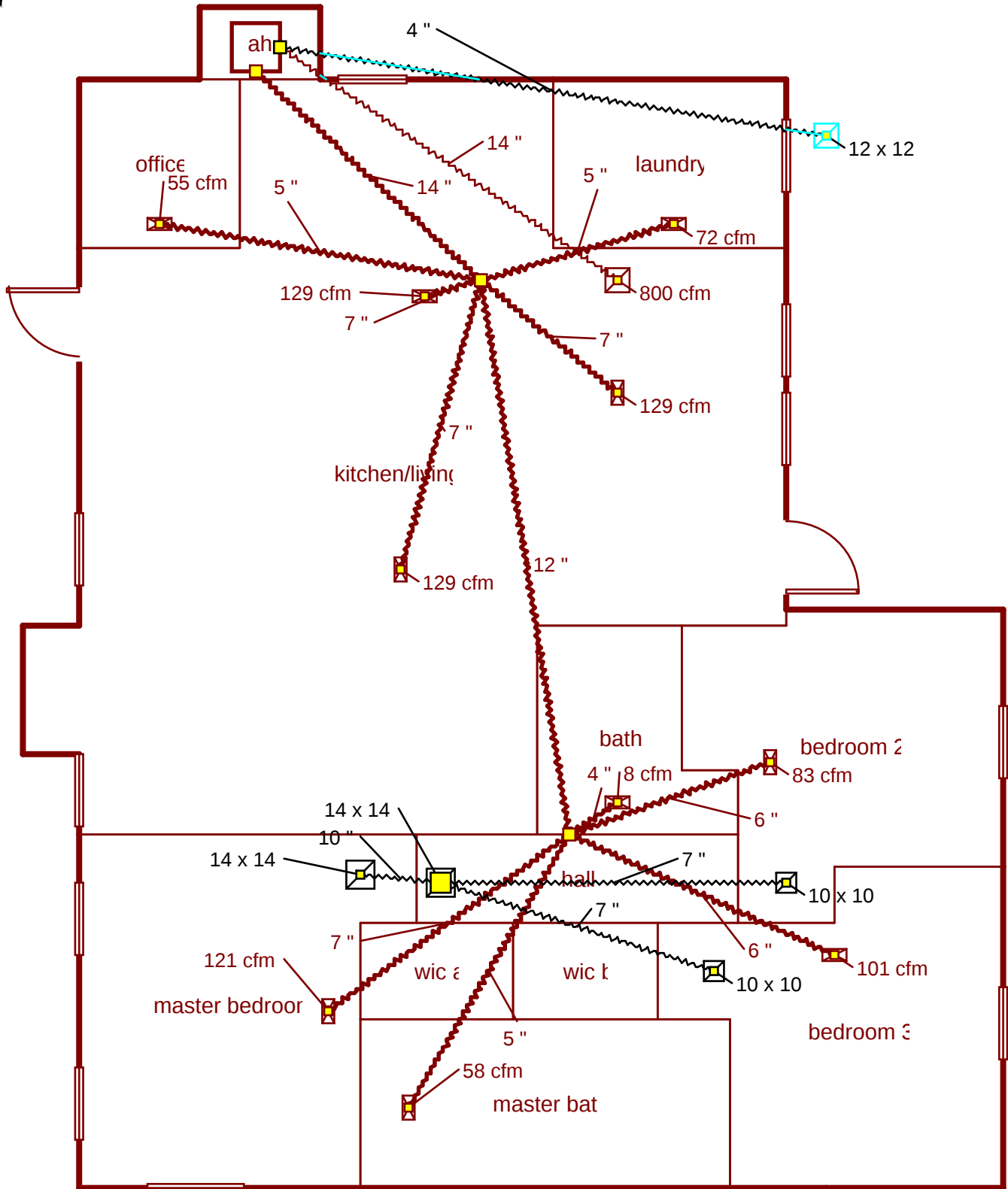
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Level 1



Job #:
Performed by Josh Legler for:
Ponder

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www.boundshvac.com jlegler@boundshvac.com

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Duct System Summary

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Project Information

For: Ponder, Amira

	Heating	Cooling
External static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Pressure losses	0.23 in H ₂ O	0.23 in H ₂ O
Available static pressure	0.27 in H ₂ O	0.27 in H ₂ O
Supply / return available pressure	0.215 / 0.055 in H ₂ O	0.215 / 0.055 in H ₂ O
Lowest friction rate	0.117 in/100ft	0.117 in/100ft
Actual air flow	800 cfm	800 cfm
Total effective length (TEL)	231 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	c 144	4	8	0.124	4.0	0x0	VIFx	38.4	135.0	st2
bedroom 2	h 2206	83	69	0.120	6.0	0x0	VIFx	44.9	135.0	st2
bedroom 3	h 2678	101	77	0.117	6.0	0x0	VIFx	48.1	135.0	st2
kitchen/living	c 2385	104	129	0.165	7.0	0x0	VIFx	15.2	115.0	st1
kitchen/living-A	c 2385	104	129	0.159	7.0	0x0	VIFx	20.1	115.0	st1
kitchen/living-B	c 2385	104	129	0.153	7.0	0x0	VIFx	25.2	115.0	st1
laundry	c 1345	65	72	0.158	5.0	0x0	VIFx	21.1	115.0	st1
master bath	h 1540	58	32	0.117	5.0	0x0	VIFx	49.2	135.0	st2
master bedroom	h 3207	121	116	0.117	7.0	0x0	VIFx	48.4	135.0	st2
office	h 1451	55	41	0.152	5.0	0x0	VIFx	26.3	115.0	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
st2	Peak AVF	368	300	0.117	469	12.0	0 x 0	VinIFlx	st1
st1	Peak AVF	800	800	0.117	748	14.0	0 x 0	VinIFlx	



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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
rb1	0x 0	800	800	47.0	0.117	748	14.0	0x 0		VIFx	

