



Manual S Compliance Report

Entire House

Bounds Heating and Air

Job:
Date: Jun 01, 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: Zasciurinskas, Amira

Cooling Equipment

Design Conditions

Outdoor design DB:	92.0°F	Sensible gain:	37554 Btuh	Entering coil DB:	77.1°F
Outdoor design WB:	76.0°F	Latent gain:	5282 Btuh	Entering coil WB:	63.4°F
Indoor design DB:	75.0°F	Total gain:	42835 Btuh		
Indoor RH:	50%	Estimated airflow:	1900 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Carrier	Model:	CH14NB06000G0A0+FB4CNP061L
Actual airflow:	1900 cfm		
Sensible capacity:	39900 Btuh	106% of load	
Latent capacity:	17100 Btuh	324% of load	
Total capacity:	57000 Btuh	133% of load	SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	33.0°F	Heat loss:	44776 Btuh	Entering coil DB:	69.0°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Carrier	Model:	CH14NB06000G0A0+FB4CNP061L
Actual airflow:	1900 cfm		
Output capacity:	54500 Btuh	122% of load	Capacity balance: 29 °F
Supplemental heat required:	0 Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	1900 cfm		
Output capacity:	0 kW	0% of load	Temp. rise: 0 °F

Meets all requirements of ACCA Manual S.



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 CH14NB06000G0A0
AHRI ref 9162978

Efficiency 8.2 HSPF
Heating input
Heating output 54500 Btuh @ 47°F
Temperature rise 26 °F
Actual air flow 1900 cfm
Air flow factor 0.042 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 29 °F

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

COOLING EQUIPMENT

Make Carrier
Trade CARRIER
Cond CH14NB06000G0A0
Coil FB4CNP061L
AHRI ref 9162978

Efficiency 11.5 EER, 14 SEER
Sensible cooling 39900 Btuh
Latent cooling 17100 Btuh
Total cooling 57000 Btuh
Actual air flow 1900 cfm
Air flow factor 0.051 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.88

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Pool bath	42	1552	692	66	35
Laundry	87	537	1382	23	70
Master suite	324	2127	4836	90	245
Master bath	162	2499	1153	106	58
toilet	33	1439	793	61	40
wic	98	1055	485	45	25
Dining	182	2505	1487	106	75
Pantry	68	1256	469	53	24
Hall	79	1047	574	44	29
Kitchen	376	4141	4521	176	229
Foyer	83	1713	848	73	43
Great room	563	5715	5474	242	277
Hall 2	126	1034	655	44	33
Office	159	2502	1800	106	91

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

Family room		297	6009	5435	255	275
pwdr		40	65	105	3	5
Safe room		56	843	338	36	17
Bedroom 2		178	2441	3084	104	156
Bath 2		48	635	281	27	14
Bedroom 3		200	5660	3140	240	159
hall 3		20	0	0	0	0
Entire House	d	3220	44776	37554	1900	1900
Other equip loads			0	0		
Equip. @ 0.97 RSM				36427		
Latent cooling				5282		
TOTALS		3220	44776	41709	1900	1900

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Project Summary

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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	32450 Btuh
Ducts	12326 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	44776 Btuh

Sensible Cooling Equipment Load Sizing

Structure	22419 Btuh
Ducts	15135 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	36427 Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	2649 Btuh
Ducts	2633 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Equipment latent load	5282 Btuh

	Heating	Cooling
Area (ft ²)	3220	3220
Volume (ft ³)	32202	32202
Air changes/hour	0.19	0.10
Equiv. AVF (cfm)	102	54

Equipment Total Load (Sen+Lat)	41709 Btuh
Req. total capacity at 0.70 SHR	4.3 ton

Heating Equipment Summary

Make	Carrier
Trade	CARRIER
Model	CH14NB06000G0A0
AHRI ref	9162978
Efficiency	8.2 HSPF
Heating input	
Heating output	54500 Btuh @ 47°F
Temperature rise	26 °F
Actual air flow	1900 cfm
Air flow factor	0.042 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 29 °F	
Backup:	
Input = 0 kW, Output = 0 Btuh, 100 AFUE	

Cooling Equipment Summary

Make	Carrier
Trade	CARRIER
Cond	CH14NB06000G0A0
Coil	FB4CNP061L
AHRI ref	9162978
Efficiency	11.5 EER, 14 SEER
Sensible cooling	39900 Btuh
Latent cooling	17100 Btuh
Total cooling	57000 Btuh
Actual air flow	1900 cfm
Air flow factor	0.051 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.88

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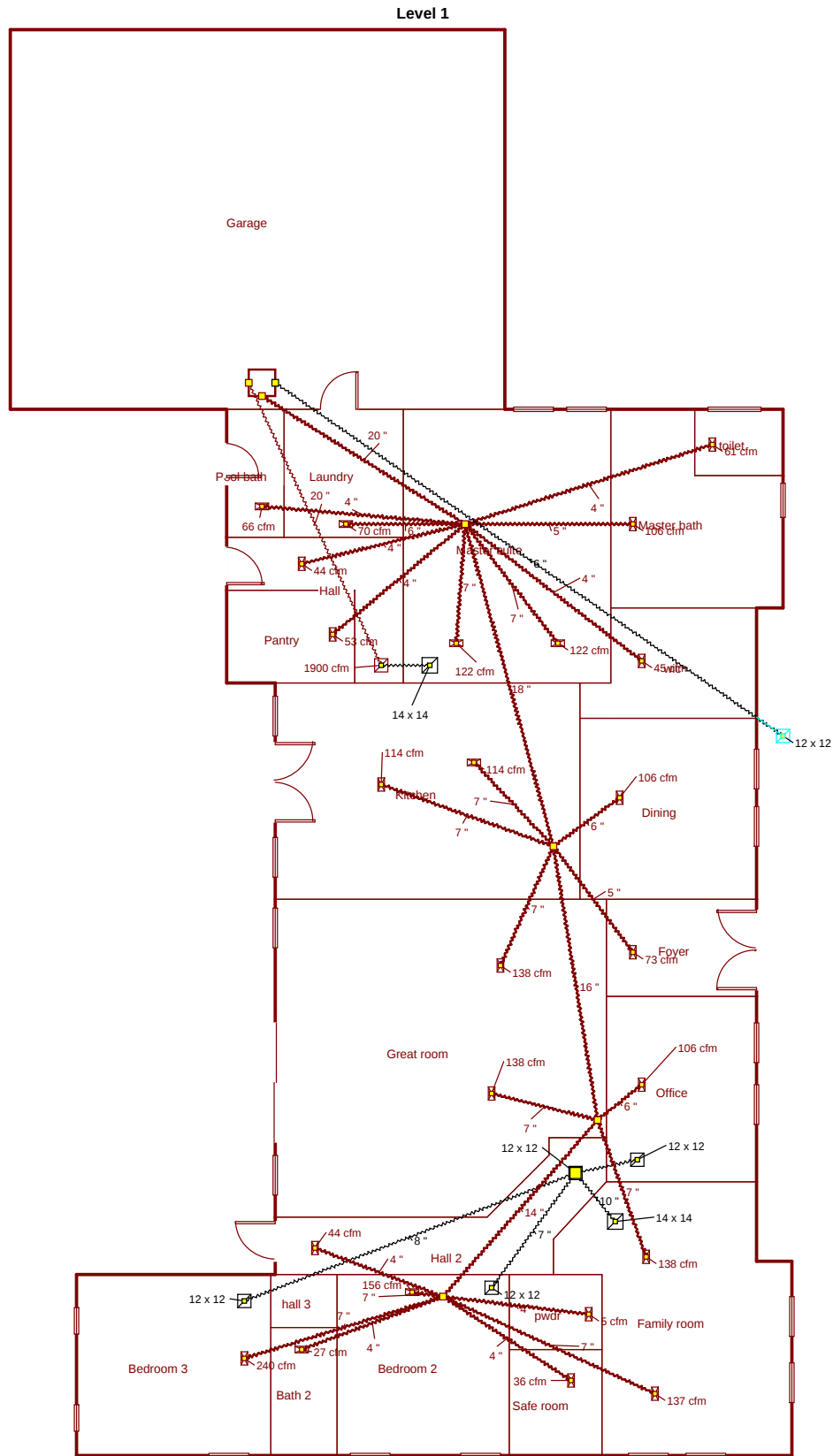


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Job #:
Performed by Josh Legler for:
Zasciurinskas

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Duct System Summary

Entire House

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Project Information

For: Zasciurinskas, 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	0.219 / 0.051 in H ₂ O	0.219 / 0.051 in H ₂ O
Lowest friction rate	0.080 in/100ft	0.080 in/100ft
Actual air flow	1900 cfm	1900 cfm
Total effective length (TEL)	338 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	h 635	27	14	0.082	4.0	0x0	VIFx	93.4	175.0	st4
Bedroom 2	c 3084	104	156	0.085	7.0	0x0	VIFx	84.4	175.0	st4
Bedroom 3	h 5660	240	159	0.080	7.0	0x0	VIFx	97.7	175.0	st4
Dining	h 2505	106	75	0.119	6.0	0x0	VIFx	49.6	135.0	st2
Family room	c 2718	128	138	0.095	7.0	0x0	VIFx	75.3	155.0	st3
Family room-A	c 2718	127	137	0.080	7.0	0x0	VIFx	99.6	175.0	st4
Foyer	h 1713	73	43	0.116	5.0	0x0	VIFx	53.4	135.0	st2
Great room	c 2737	121	138	0.096	7.0	0x0	VIFx	72.5	155.0	st3
Great room-A	c 2737	121	138	0.116	7.0	0x0	VIFx	53.2	135.0	st2
Hall	h 1047	44	29	0.150	4.0	0x0	VIFx	30.8	115.0	st1
Hall 2	h 1034	44	33	0.082	4.0	0x0	VIFx	92.3	175.0	st4
Kitchen	c 2261	88	114	0.114	7.0	0x0	VIFx	57.2	135.0	st2
Kitchen-A	c 2261	88	114	0.117	7.0	0x0	VIFx	52.1	135.0	st2
Laundry	c 1382	23	70	0.154	6.0	0x0	VIFx	27.1	115.0	st1
Master bath	h 2499	106	58	0.150	5.0	0x0	VIFx	30.8	115.0	st1
Master suite	c 2418	45	122	0.154	7.0	0x0	VIFx	27.2	115.0	st1
Master suite-A	c 2418	45	122	0.152	7.0	0x0	VIFx	29.5	115.0	st1
Office	h 2502	106	91	0.098	6.0	0x0	VIFx	68.6	155.0	st3
Pantry	h 1256	53	24	0.150	4.0	0x0	VIFx	31.1	115.0	st1
Pool bath	h 1552	66	35	0.148	4.0	0x0	VIFx	33.5	115.0	st1
Safe room	h 843	36	17	0.082	4.0	0x0	VIFx	93.6	175.0	st4
pwdr	c 105	3	5	0.082	4.0	0x0	VIFx	93.1	175.0	st4
toilet	h 1439	61	40	0.144	4.0	0x0	VIFx	37.7	115.0	st1
wic	h 1055	45	25	0.146	4.0	0x0	VIFx	35.0	115.0	st1



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Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st4	Peak AVF	581	522	0.080	543	14.0	0 x 0	VinIFlx	st3
st3	Peak AVF	936	889	0.080	670	16.0	0 x 0	VinIFlx	st2
st2	Peak AVF	1411	1375	0.080	799	18.0	0 x 0	VinIFlx	st1
st1	Peak AVF	1900	1900	0.080	871	20.0	0 x 0	VinIFlx	

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	1900	1900	63.6	0.080	515	26.0	0x 0		VIFx	rst12

Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rst12	Peak AVF	1900	1900	0.080	871	20.0	0 x 0	VinIFlx	