



Manual S Compliance Report

Entire House

Bounds Heating and Air

Job:
Date: Feb 07, 2022
By:

Email: jlegler@boundshvac.com

Project Information

For: Welsh, Amira Builders

Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	17640 Btuh	Entering coil DB:	76.8°F
Outdoor design WB:	75.8°F	Latent gain:	2951 Btuh	Entering coil WB:	63.4°F
Indoor design DB:	75.0°F	Total gain:	20591 Btuh		
Indoor RH:	50%	Estimated airflow:	953 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Carrier	Model:	CH14NB030P00GA0+FB4CNF030L++TXV
Actual airflow:	953 cfm		
Sensible capacity:	20020 Btuh	113% of load	
Latent capacity:	8580 Btuh	291% of load	
Total capacity:	28600 Btuh	139% of load	SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	20867 Btuh	Entering coil DB:	67.2°F
Indoor design DB:	68.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Carrier	Model:	CH14NB030P00GA0+FB4CNF030L++TXV
Actual airflow:	953 cfm		
Output capacity:	28600 Btuh	137% of load	Capacity balance: 27 °F
Supplemental heat required:	0 Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	953 cfm		
Output capacity:	5.7 kW	93% of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



Load Short Form

Entire House

Bounds Heating and Air

Job:
Date: Feb 07, 2022
By:

Email: jlegler@boundshvac.com

Project Information

For: Welsh, Amira Builders

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	33	92	Method	Simplified
Inside db (°F)	68	75	Construction quality	Semi-tight
Design TD (°F)	35	17	Fireplaces	0
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	29	44		

HEATING EQUIPMENT

Make Carrier
Trade CARRIER
Model CH14NB030P00GA0
AHRI ref 204861632

Efficiency 8.2 HSPF
Heating input
Heating output 28600 Btuh @ 47°F
Temperature rise 27 °F
Actual air flow 953 cfm
Air flow factor 0.046 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 27 °F

Backup:
Input = 6 kW, Output = 19438 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Carrier
Trade CARRIER
Cond CH14NB030P00GA0
Coil FB4CNF030L++TXV
AHRI ref 204861632

Efficiency 11.5 EER, 14 SEER
Sensible cooling 20020 Btuh
Latent cooling 8580 Btuh
Total cooling 28600 Btuh
Actual air flow 953 cfm
Air flow factor 0.054 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.86

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
laundry	80	2312	1673	106	90
ah	19	0	0	0	0
wic	44	60	103	3	6
master bath	110	2379	1011	109	55
master suite	182	3762	3203	172	173
living/kitchen	511	5376	6990	246	378
bedroom 3	177	3183	1992	145	108
hall	21	0	0	0	0
bath	65	657	283	30	15
bedroom 2	166	3137	2386	143	129

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

Entire House	1376	20867	17640	953	953
Other equip loads		0	0		
Equip. @ 0.97 RSM			17146		
Latent cooling			2951		
TOTALS	1376	20867	20097	953	953

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



Right-Suite® Universal 2021 21.0.08 RSU01870

...es\PDF plans & J&D (2022)\Amiral\Welsh\Welsh.rup Calc = MJ8 Front Door faces: W

2022-Feb-07 09:45:52

Page 2



Project Summary

Entire House

Bounds Heating and Air

Job:
Date: Feb 07, 2022
By:

Email: jlegler@boundshvac.com

Project Information

For: Welsh, Amira Builders

Notes:

Design Information

Weather: Gainesville Regional, FL, US

Winter Design Conditions

Outside db	33 °F
Inside db	68 °F
Design TD	35 °F

Summer Design Conditions

Outside db	92 °F
Inside db	75 °F
Design TD	17 °F
Daily range	M
Relative humidity	50 %
Moisture difference	44 gr/lb

Heating Summary

Structure	16061 Btuh
Ducts	4805 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	20867 Btuh

Sensible Cooling Equipment Load Sizing

Structure	11729 Btuh
Ducts	5911 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	17146 Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	1779 Btuh
Ducts	1172 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Equipment latent load	2951 Btuh

	Heating	Cooling
Area (ft ²)	1376	1376
Volume (ft ³)	12380	12380
Air changes/hour	0.31	0.16
Equiv. AVF (cfm)	64	33

Equipment Total Load (Sen+Lat)	20097 Btuh
Req. total capacity at 0.70 SHR	2.0 ton

Heating Equipment Summary

Make	Carrier
Trade	CARRIER
Model	CH14NB030P00GA0
AHRI ref	204861632
Efficiency	8.2 HSPF
Heating input	
Heating output	28600 Btuh @ 47°F
Temperature rise	27 °F
Actual air flow	953 cfm
Air flow factor	0.046 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 27 °F	
Backup:	
Input = 6 kW, Output = 19438 Btuh, 100 AFUE	

Cooling Equipment Summary

Make	Carrier
Trade	CARRIER
Cond	CH14NB030P00GA0
Coil	FB4CNF030L++TXV
AHRI ref	204861632
Efficiency	11.5 EER, 14 SEER
Sensible cooling	20020 Btuh
Latent cooling	8580 Btuh
Total cooling	28600 Btuh
Actual air flow	953 cfm
Air flow factor	0.054 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.86

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



Right-Suite® Universal 2021 21.0.08 RSU01870

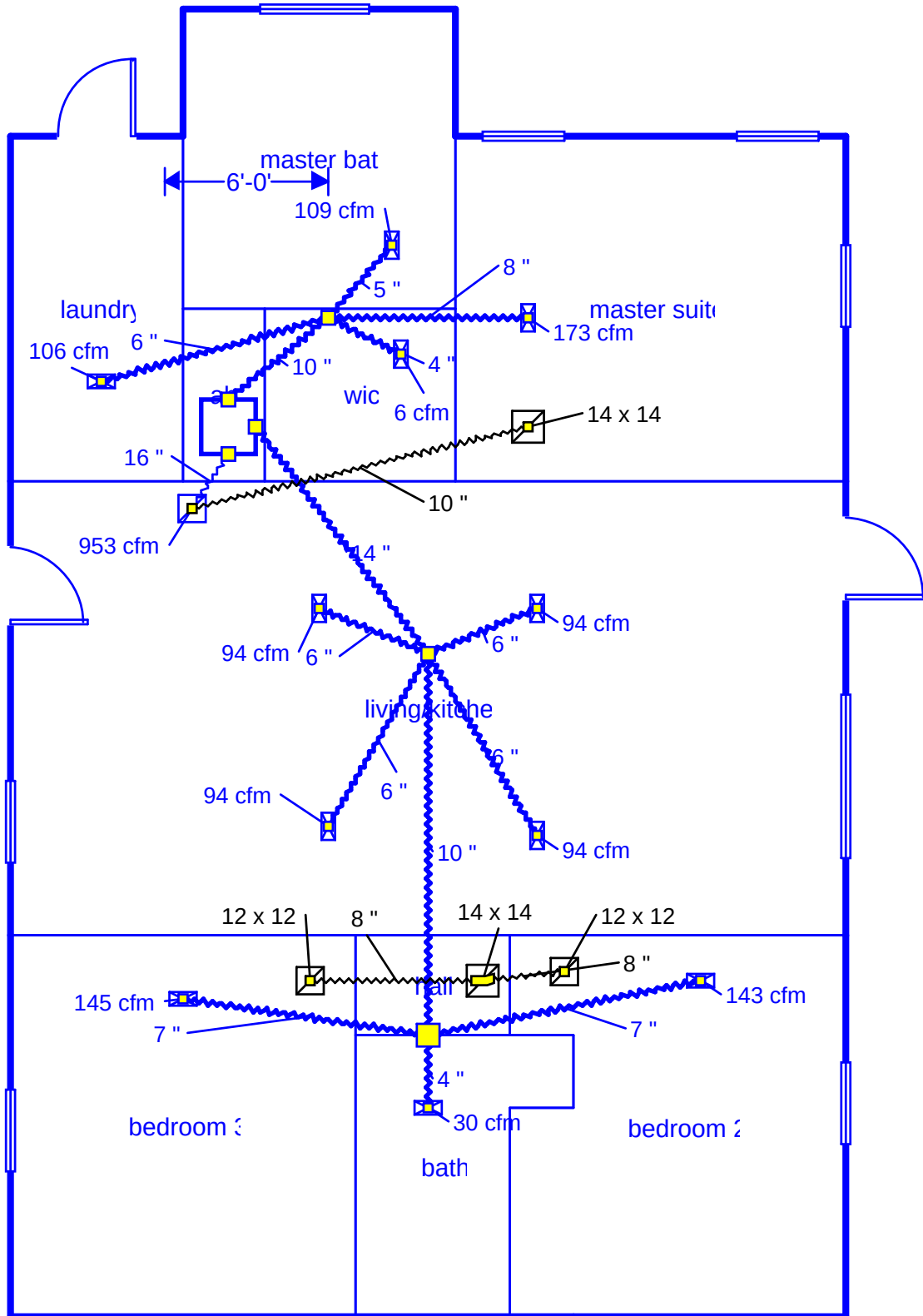
...es\PDF plans & J&D (2022)\Amira\Welsh\Welsh.rup Calc = MJ8 Front Door faces: W

2022-Feb-07 09:45:52

Page 1



Level 1



Job #:
Performed for:
Welsh

Bounds Heating and Air

jlegler@boundshvac.com

Scale: 1 : 70

Page 1

Right-Suite® Universal 2021

21.0.08 RSU01870

2022-Feb-07 09:46:33

...J&D (2022)\Amira\Welsh\Welsh.rup



Duct System Summary

Entire House

Bounds Heating and Air

Job:
Date: Feb 07, 2022
By:

Email: jlegler@boundshvac.com

Project Information

For: Welsh, Amira Builders

	Heating	Cooling
External static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Pressure losses	0 in H ₂ O	0 in H ₂ O
Available static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Supply / return available pressure	0.387 / 0.113 in H ₂ O	0.387 / 0.113 in H ₂ O
Lowest friction rate	0.267 in/100ft	0.267 in/100ft
Actual air flow	953 cfm	953 cfm
Total effective length (TEL)	187 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	h 657	30	15	0.282	4.0	0x0	VIFx	27.1	110.0	st3
bedroom 2	h 3137	143	129	0.267	7.0	0x0	VIFx	34.7	110.0	st3
bedroom 3	h 3183	145	108	0.269	7.0	0x0	VIFx	33.6	110.0	st3
laundry	h 2312	106	90	0.374	6.0	0x0	VIFx	13.4	90.0	st1
living/kitchen	c 1747	61	94	0.369	6.0	0x0	VIFx	14.8	90.0	st2
living/kitchen-A	c 1747	61	94	0.359	6.0	0x0	VIFx	17.8	90.0	st2
living/kitchen-B	c 1747	61	94	0.369	6.0	0x0	VIFx	14.8	90.0	st2
living/kitchen-C	c 1747	61	94	0.357	6.0	0x0	VIFx	18.2	90.0	st2
master bath	h 2379	109	55	0.393	5.0	0x0	VIFx	8.3	90.0	st1
master suite	c 3203	172	173	0.379	8.0	0x0	VIFx	12.1	90.0	st1
wic	c 103	3	6	0.396	4.0	0x0	VIFx	7.7	90.0	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
st3	Peak AVF	319	252	0.267	584	10.0	0 x 0	VinIFlx	st2
st2	Peak AVF	564	630	0.267	589	14.0	0 x 0	VinIFlx	
st1	Peak AVF	389	324	0.374	713	10.0	0 x 0	VinIFlx	

Bold/italic values have been manually overridden



Right-Suite® Universal 2021 21.0.08 RSU01870

...es\PDF plans & J&D (2022)\Amira\Welsh\Welsh.rup

Calc = MJ8 Front Door faces: W

2022-Feb-07 09:45:52

Page 1

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	953	953	42.4	0.267	539	18.0	0x 0		VIFx	rst2

Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rst2	Peak AVF	953	953	0.267	683	16.0	0 x 0	VinIFlx	

Bold/italic values have been manually overridden



Right-Suite® Universal 2021 21.0.08 RSU01870

...es\PDF plans & J&D (2022)\Amira\Welsh\Welsh.rup Calc = MJ8 Front Door faces: W

2022-Feb-07 09:45:52

Page 2