



Project Summary Entire House

Job: Steedly Residence J-3701
Date: Aug 22, 2020
By: Roger

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Project Information

For: Steedly Residence
FI 32024

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	47 gr/lb

Heating Summary

Structure	24579 Btuh
Ducts	7224 Btuh
Central vent (0 cfm) (none)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	31803 Btuh

Sensible Cooling Equipment Load Sizing

Structure	15645 Btuh
Ducts	9465 Btuh
Central vent (0 cfm) (none)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	24357 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	2569 Btuh
Ducts	2005 Btuh
Central vent (0 cfm) (none)	0 Btuh
Equipment latent load	4574 Btuh

	Heating	Cooling
Area (ft²)	1799	1799
Volume (ft³)	16555	16555
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	105	55

Equipment Total Load (Sen+Lat)	28931 Btuh
Req. total capacity at 0.70 SHR	2.9 ton

Heating Equipment Summary

Make	Goodman Mfg.
Trade	GOODMAN
Model	GSZ140361K
AHRI ref	201645069
Efficiency	8.2 HSPF
Heating input	
Heating output	32800 Btuh @ 47°F
Temperature rise	26 °F
Actual air flow	1147 cfm
Air flow factor	0.036 cfm/Btuh
Static pressure	0.53 in H2O
Space thermostat	
Capacity balance point = 33 °F	

Cooling Equipment Summary

Make	Goodman Mfg.
Trade	GOODMAN
Cond	GSZ140361K
Coil	ARUF37D14A
AHRI ref	201645069
Efficiency	11.5 EER, 14 SEER
Sensible cooling	24080 Btuh
Latent cooling	10320 Btuh
Total cooling	34400 Btuh
Actual air flow	1147 cfm
Air flow factor	0.046 cfm/Btuh
Static pressure	0.53 in H2O
Load sensible heat ratio	0.85

Backup:
Input = 6 kW, Output = 20916 Btuh, 100 AFUE

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



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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	0.308 / 0.222 in H2O	0.308 / 0.222 in H2O
Lowest friction rate	0.201 in/100ft	0.201 in/100ft
Actual air flow	1147 cfm	1147 cfm
Total effective length (TEL)	264 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 4769	172	123	0.255	8.0	0x0	VIFx	30.7	90.0	st3
Bed 2	c 2435	86	111	0.267	6.0	0x0	VIFx	20.5	95.0	st1
Bed 2 WIC	h 611	22	9	0.261	4.0	0x0	VIFx	22.9	95.0	st1
Bed 3	h 2215	80	65	0.278	5.0	0x0	VIFx	15.8	95.0	st1
Bed 3 WIC	h 1192	43	16	0.256	5.0	0x0	VIFx	25.2	95.0	st1
Dining Rm	c 3680	157	168	0.268	8.0	0x0	VIFx	25.1	90.0	st3
Great Room	c 2703	77	123	0.236	7.0	0x0	VIFx	40.8	90.0	st3
Great Room-A	c 2703	77	123	0.256	7.0	0x0	VIFx	30.3	90.0	st3
Kitchen	c 1984	90	91	0.237	6.0	0x0	VIFx	39.8	90.0	st3
Laundry	c 2549	82	116	0.217	7.0	0x0	VIFx	52.0	90.0	st2
M WIC	c 59	1	3	0.216	4.0	0x0	VIFx	52.6	90.0	st2
Master Bath	h 2398	86	37	0.201	6.0	0x0	VIFx	58.5	95.0	st2
Master Bed	h 4822	174	161	0.206	8.0	0x0	VIFx	59.5	90.0	st2

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1	Peak AVF	231	201	0.256	523	9.0	0 x 0	VinIFlx	
st2	Peak AVF	344	317	0.201	438	12.0	0 x 0	VinIFlx	
st3	Peak AVF	572	629	0.236	588	14.0	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
rb4	0x0	262	201	110.6	0.201	592	9.0	0x 0		VIFx	rt1
rb3	0x0	123	81	63.7	0.349	460	7.0	0x 0		VIFx	rt1
rb2	0x0	108	120	64.0	0.347	449	7.0	0x 0		VIFx	rt1
rb1	0x0	654	745	44.9	0.494	534	16.0	0x 0		VIFx	

Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rt1	Peak AVF	493	402	0.201	461	14.0	0 x 0	VinIFlx	



Manual S Compliance Report Entire House

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Cooling Equipment

Design Conditions

Outdoor design DB:	92.0°F	Sensible gain:	25110	Btuh	Entering coil DB:	78.0°F
Outdoor design WB:	76.3°F	Latent gain:	4574	Btuh	Entering coil WB:	64.0°F
Indoor design DB:	75.0°F	Total gain:	29684	Btuh		
Indoor RH:	50%	Estimated airflow:	1147	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Goodman Mfg.	Model:	GSZ140361K+ARUF37D14A
Actual airflow:	1147	cfm	
Sensible capacity:	24080	Btuh	96% of load
Latent capacity:	10320	Btuh	226% of load
Total capacity:	34400	Btuh	116% of load SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	33.4°F	Heat loss:	31803	Btuh	Entering coil DB:	68.5°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Goodman Mfg.	Model:	GSZ140361K+ARUF37D14A
Actual airflow:	1147	cfm	
Output capacity:	32800	Btuh	103% of load
Supplemental heat required:	0	Btuh	
Capacity balance:	33	°F	
Economic balance:	-99	°F	

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	1147	cfm	
Output capacity:	6.1	kW	66% of load Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



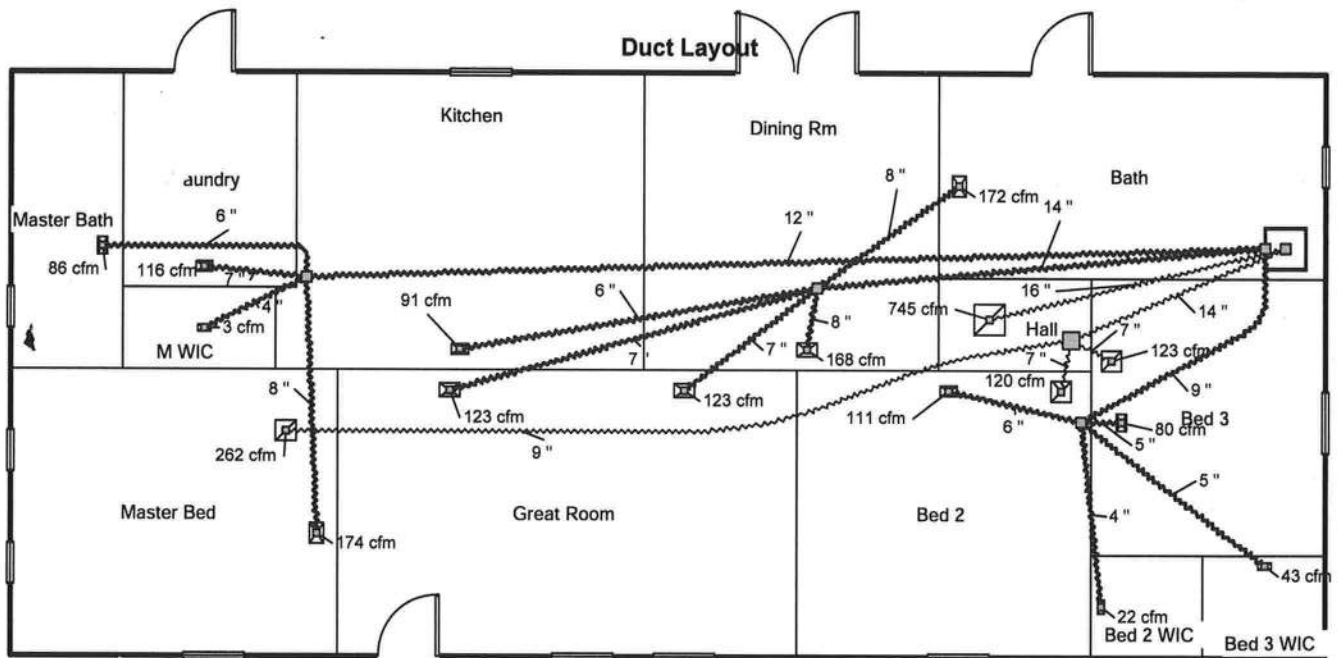
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Performed by Roger for:
Steedly Residence

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2017 - AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA

TABLE 402.4.1.1
AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA

Project Name: Steadly Residence J-3701 Street: City, State, Zip: , FL , 32024 Owner: Ace Heating and Air Design Location: FL, Gainesville		Builder Name: Permit Office: Permit Number: Jurisdiction:	CHECK
COMPONENT	AIR BARRIER CRITERIA	INSULATION INSTALLATION CRITERIA	
General requirements	A continuous air barrier shall be installed in the building envelope. The exterior thermal envelope contains a continuous air barrier. Breaks or joints in the air barrier shall be sealed.	Air-permeable insulation shall not be used as a sealing material.	
Ceiling/attic	The air barrier in any dropped ceiling/soffit shall be aligned with the insulation and any gaps in the air barrier shall be sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.	The insulation in any dropped ceiling/soffit shall be aligned with the air barrier.	
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance of R-3 per inch minimum. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.	
Windows, skylights and doors	The space between window/door jambs and framing, and skylights and framing shall be sealed.		
Rim joists	Rim joists shall include the air barrier.	Rim joists shall be insulated.	
Floors (including above-garage and cantilevered floors)	The air barrier shall be installed at any exposed edge of insulation.	Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking, or floor framing cavity insulation shall be permitted to be in contact with the top side of sheathing, or continuous insulation installed on the underside of floor framing and extends from the bottom to the top of all perimeter floor framing members.	
Crawl space walls	Exposed earth in unvented crawl spaces shall be covered with a Class I vapor retarder with overlapping joints taped.	Where provided instead of floor insulation, insulation shall be permanently attached to the crawlspace	
Shafts, penetrations	Duct shafts, utility penetrations, and flue shafts opening to exterior or unconditioned space shall be sealed.		
Narrow cavities		Batts in narrow cavities shall be cut to fit, or narrow cavities shall be filled by insulation that on installation readily conforms to the available cavity spaces.	
Garage separation	Air sealing shall be provided between the garage and conditioned spaces.		
Recessed lighting	Recessed light fixtures installed in the building thermal envelope shall be sealed to the drywall.	Recessed light fixtures installed in the building thermal envelope shall be air tight and IC rated.	
Plumbing and wiring		Batt insulation shall be cut neatly to fit around wiring and plumbing in exterior walls, or insulation that on installation readily conforms to available space shall extend behind piping and wiring.	
Shower/tub on exterior wall	The air barrier installed at exterior walls adjacent to showers and tubs shall separate them from the showers and tubs.	Exterior walls adjacent to showers and tubs shall be insulated.	
Electrical/phone box on exterior walls	The air barrier shall be installed behind electrical or communication boxes or air-sealed boxes shall be installed.		
HVAC register boots	HVAC register boots that penetrate building thermal envelope shall be sealed to the sub-floor or drywall.		
Concealed sprinklers	When required to be sealed, concealed fire sprinklers shall only be sealed in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.		

a. In addition, inspection of log walls shall be in accordance with the provisions of ICC-400.

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 89

The lower the Energy Performance Index, the more efficient the home.

1. New home or, addition	1. <u>New (From Plans)</u>	12. Ducts, location & insulation level	
2. Single-family or multiple-family	2. <u>Single-family</u>	a) Supply ducts	R <u>6.0</u>
3. No. of units (if multiple-family)	3. <u>1</u>	b) Return ducts	R <u>6.0</u>
4. Number of bedrooms	4. <u>3</u>	c) AHU location	Main
5. Is this a worst case? (yes/no)	5. <u>No</u>	13. Cooling system:	Capacity <u>34.4</u>
6. Conditioned floor area (sq. ft.)	6. <u>1799</u>	a) Split system	SEER <u>14.0</u>
7. Windows, type and area		b) Single package	SEER <u> </u>
a) U-factor:(weighted average)	7a. <u>0.350</u>	c) Ground/water source	SEER/COP <u> </u>
b) Solar Heat Gain Coefficient (SHGC)	7b. <u>0.250</u>	d) Room unit/PTAC	EER <u> </u>
c) Area	7c. <u>219.6</u>	e) Other	<u> </u>
8. Skylights		14. Heating system:	Capacity <u>34.4</u>
a) U-factor:(weighted average)	8a. <u>NA</u>	a) Split system heat pump	HSPF <u>8.2</u>
b) Solar Heat Gain Coefficient (SHGC)	8b. <u>NA</u>	b) Single package heat pump	HSPF <u> </u>
9. Floor type, insulation level:		c) Electric resistance	COP <u> </u>
a) Slab-on-grade (R-value)	9a. <u>0.0</u>	d) Gas furnace, natural gas	AFUE <u> </u>
b) Wood, raised (R-value)	9b. <u> </u>	e) Gas furnace, LPG	AFUE <u> </u>
c) Concrete, raised (R-value)	9c. <u> </u>	f) Other	<u> </u>
10. Wall type and insulation:		15. Water heating system	
A. Exterior:		a) Electric resistance	EF <u> </u>
1. Wood frame (Insulation R-value)	10A1. <u>19.0</u>	b) Gas fired, natural gas	EF <u>0.66</u>
2. Masonry (Insulation R-value)	10A2. <u> </u>	c) Gas fired, LPG	EF <u> </u>
B. Adjacent:		d) Solar system with tank	EF <u> </u>
1. Wood frame (Insulation R-value)	10B1. <u> </u>	e) Dedicated heat pump with tank	EF <u> </u>
2. Masonry (Insulation R-value)	10B2. <u> </u>	f) Heat recovery unit	HeatRec% <u> </u>
11. Ceiling type and insulation level		g) Other	<u> </u>
a) Under attic	11a. <u>38.0</u>	16. HVAC credits claimed (Performance Method)	
b) Single assembly	11b. <u> </u>	a) Ceiling fans	<u> </u>
c) Knee walls/skylight walls	11c. <u> </u>	b) Cross ventilation	<u>No</u>
d) Radiant barrier installed	11d. <u>No</u>	c) Whole house fan	<u>No</u>
		d) Multizone cooling credit	<u> </u>
		e) Multizone heating credit	<u> </u>
		f) Programmable thermostat	<u>Yes</u>

*Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

I certify that this home has complied with the Florida Building Code, Energy Conservation, through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL display card will be completed based on installed code compliant features.

Builder Signature: _____ Date: _____

Address of New Home: _____ City/FL Zip: _____, FL 32024