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Manual S Compliance Report
Entire House
Hometown Heating and Air

Job:
Date: Feb 12, 2022
By:

399 SW Boston Terrace, Fort White, Florida 32038 Phone: 352-316-7273 Email: hometownheatandair@gmail.com License: CAC1818078

Project Information

For: Linda Laird
480 SW GRAPEVINE CT, FORT WHITE, FL 32038

Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	21836	Btuh	Entering coil DB:	75.0°F
Outdoor design WB:	75.8°F	Latent gain:	3371	Btuh	Entering coil WB:	62.5°F
Indoor design DB:	75.0°F	Total gain:	25207	Btuh		
Indoor RH:	50%	Estimated airflow:	860	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Goodman Mfg. Model: GSZC160241C+AVPTC25B14B

Actual airflow:	860	cfm		
Sensible capacity:	19440	Btuh	89% of load	
Latent capacity:	2430	Btuh	72% of load	
Total capacity:	21871	Btuh	87% of load	SHR: 89%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	26000	Btuh	Entering coil DB:	68.0°F
Indoor design DB:	68.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: Goodman Mfg. Model: GSZC160241C+AVPTC25B14B

Actual airflow:	860	cfm			
Output capacity:	22400	Btuh	86% of load	Capacity balance:	37 °F
Supplemental heat required:	3600	Btuh		Economic balance:	-99 °F

Backup equipment type: Elec strip
Manufacturer: n/a Model: n/a+n/a

Actual airflow:	860	cfm			
Output capacity:	9.9	kW	130% of load	Temp. rise:	41 °F

Meets all requirements of ACCA Manual S.

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DHW Report
Entire House
Hometown Heating and Air

Job:
Date: Feb 12, 2022
By:

399 SW Boston Terrace, Fort White, Florida 32038 Phone: 352-316-7273 Email: hometownheatandair@gmail.com License: CAC1818078

Project Information

For: Linda Laird
480 SW GRAPEVINE CT, FORT WHITE, FL 32038

Design Criteria

Occupants	
Age	Number
0-5	0
6-13	2
14-59	2
60+	0

Not occupied during the day	
Dishwasher	
Clothes washer	
Additional use (gpd)	0
Setpoint (°F)	120
Daily use (gpd)	62

Electric conventional (50 gal, 0.95 EF)

Manufacturer	A.O. Smith Water Products C	Tank size (gal)	50
Trade name	A.O. Smith	Energy factor	0.95
Model	PXHT-52	Input (kWh)	0.0
AHRI ref. number	230134	1st hour (gal)	60
		Recovery eff. (%)	98

Residential Plans Examiner Review Form for HVAC System Design (Loads, Equipment, Ducts)

Form RPER 1 15 Mar 09

Header Information

Contractor: Hometown Heating and Air
Matthew McClellan
Mechanical license: CAC1818078

Building plan #:

Home address (Street or Lot#, Block, Subdivision): 480 SW GRAPEVINE CT, Entire House

REQUIRED ATTACHMENTS	ATTACHED
Manual J1 Form (and supporting worksheets):	Yes ☐ No ☐
or MJ1AE Form* (and supporting worksheets):	Yes ☐ No ☐
OEM performance data (heating, cooling, blower):	Yes ☐ No ☐
Manual D Friction Rate Worksheet:	Yes ☐ No ☐
Duct distribution sketch:	Yes ☐ No ☐

HVAC LOAD CALCULATION (IRC M1401.3)

Design Conditions

Winter Design Conditions

Outdoor temperature:	33	°F
Indoor temperature:	68	°F
Total heat loss:	26000	Btuh

Summer Design Conditions

Outdoor temperature:	92	°F
Indoor temperature:	75	°F
Grains difference:	44 gr/lb @ 50% RH	
Sensible heat gain:	22465	Btuh
Latent heat gain:	3468	Btuh
Total heat gain:	25933	Btuh

Building Construction Information

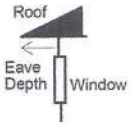
Building

Orientation: Front Door faces North
North, East, West, South, Northeast, Northwest, Southeast, Southwest

Number of bedrooms:	3	
Conditioned floor area:	1785	ft²
Number of occupants:	5	

Windows

Eave overhang depth:	0	ft
Internal shade: Blinds, drapes, etc.	none	
Number of skylights:	0	



HVAC EQUIPMENT SELECTION (IRC M1401.3)

Heating Equipment Data

Equipment type: Furnace, Heat pump, Boiler, etc.	Split ASHP
Model:	Goodman Mfg. GSZC160241C+AVPTC25B14B
Heating output capacity: Heat pumps - capacity at winter design outdoor conditions	0 Btuh
Aux. heating output capacity:	33831 Btuh

Cooling Equipment Data

Equipment type: Air Conditioner, Heat pump, etc.	Split ASHP
Model:	Goodman Mfg. GSZC160241C+AVPTC25B14B
Total cooling capacity:	21871 Btuh
Sensible cooling capacity:	19440 Btuh
Latent cooling capacity:	2430 Btuh

Blower Data

Heating cfm:	860
Cooling cfm:	860
Static pressure: Fan's rated external static pressure for design airflow	0 in H2O

HVAC DUCT DISTRIBUTION SYSTEM DESIGN (IRC M1601.1)

Design airflow:	860 cfm	Longest supply duct:	0 ft	Duct Materials Used	
Equipment design ESP:	0 in H2O	Longest return duct:	0 ft	Trunk duct:	
Total device pressure losses:	0 in H2O	**Total effective length (TEL):**	0 ft		
Available static pressure (ASP):	0 in H2O	**Friction rate:** Friction Rate = ASP ÷ (TEL x 100)	0 in/100ft	Branch duct:	Round flex vinyl

I declare the load calculation, equipment, equipment selection and duct design were rigorously performed based on the building plan listed above. I understand the claims made on these forms will be subject to review and verification.

Contractor's printed name: _____

Contractor's signature: _____ Date: _____

Reserved for County, Town Municipality or Authority having jurisdiction use.

*Home qualifies for MJ1AE Form based on Abridged Edition Checklist

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Load Short Form
Entire House
Hometown Heating and Air

Job:
Date: Feb 12, 2022
By:

399 SW Boston Terrace, Fort White, Florida 32038 Phone: 352-316-7273 Email: hometownheatandair@gmail.com License: CAC1818078

Project Information

For: Linda Laird
480 SW GRAPEVINE CT, FORT WHITE, FL 32038

Design Information

	Htg	Clg
Outside db (°F)	33	92
Inside db (°F)	68	75
Design TD (°F)	35	17
Daily range	-	M
Inside humidity (%)	50	50
Moisture difference (gr/lb)	29	44

Infiltration

Method	Blower door
Shielding / stories	1 (no shielding) / 1
Pressure / AVF	50 Pa / 1512 cfm

HEATING EQUIPMENT

Make	Goodman Mfg.
Trade	GOODMAN
Model	GSZC160241C
AHRI ref	202541735

Efficiency	8.5 HSPF	
Heating input		
Heating output	22400	Btuh @ 47°F
Temperature rise	24	°F
Actual air flow	860	cfm
Air flow factor	0.033	cfm/Btuh
Static pressure	0	in H2O
Space thermostat		

Capacity balance point = 37 °F

Backup: n/a n/a
Input = 10 kW, Output = 33831 Btuh, 100 AFUE

COOLING EQUIPMENT

Make	Goodman Mfg.
Trade	GOODMAN
Cond	GSZC160241C
Coil	AVPTC25B14B
AHRI ref	202541735

Efficiency	12.5 EER, 15 SEER	
Sensible cooling	15680	Btuh
Latent cooling	6720	Btuh
Total cooling	22400	Btuh
Actual air flow	860	cfm
Air flow factor	0.039	cfm/Btuh
Static pressure	0	in H2O
Load sensible heat ratio	0.87	

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
MASTER	195	4144	5447	137	215
PANTRY	36	635	176	21	7
BATH 2	70	206	96	7	4
STORAGE	32	150	65	5	3
ENTRY	64	1295	970	43	38
WIC	25	1103	324	36	13
AC	15	0	0	0	0
LIVING ROOM	408	5910	4593	195	181
KITCHEN	286	4722	3749	156	148
HALLWAY	140	0	0	0	0
MASTER BATH	157	2183	1694	72	67
BEDROOM 2	174	3638	1832	120	72
BEDROOM 3	162	1846	2370	61	93
LAUNDRY	36	169	521	6	21

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

Entire House	1800	26000	21836	860	860
Other equip loads		0	0		
Equip. @ 0.97 RSM			21225		
Latent cooling			3371		
TOTALS	1800	26000	24596	860	860

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

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Project Summary
Entire House
Hometown Heating and Air

Job:
Date: Feb 12, 2022
By:

399 SW Boston Terrace, Fort White, Florida 32038 Phone: 352-316-7273 Email: hometownheatandair@gmail.com License: CAC1818078

Project Information

For: Linda Laird
480 SW GRAPEVINE CT, FORT WHITE, FL 32038

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	26000 Btuh
Ducts	0 Btuh
Central vent (0 cfm) (none)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	26000 Btuh

Sensible Cooling Equipment Load Sizing

Structure	21836 Btuh
Ducts	0 Btuh
Central vent (0 cfm) (none)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	21225 Btuh

Infiltration

Method	Blower door
Shielding / stories	1 (no shielding) / 1
Pressure / AVF	50 Pa / 1512 cfm

	Heating	Cooling
Area (ft²)	1785	1785
Volume (ft³)	18147	18147
Air changes/hour	0.49	0.26
Equiv. AVF (cfm)	149	80

Latent Cooling Equipment Load Sizing

Structure	3371 Btuh
Ducts	0 Btuh
Central vent (0 cfm) (none)	0 Btuh
Equipment latent load	3371 Btuh
Equipment Total Load (Sen+Lat)	24596 Btuh
Req. total capacity at 0.70 SHR	2.5 ton

Heating Equipment Summary

Make	Goodman Mfg.
Trade	GOODMAN
Model	GSZC160241C
AHRI ref	202541735

Efficiency	8.5 HSPF
Heating input	
Heating output	22400 Btuh @ 47°F
Temperature rise	24 °F
Actual air flow	860 cfm
Air flow factor	0.033 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	

Capacity balance point = 37 °F

Backup: n/a n/a
Input = 10 kW, Output = 33831 Btuh, 100 AFUE

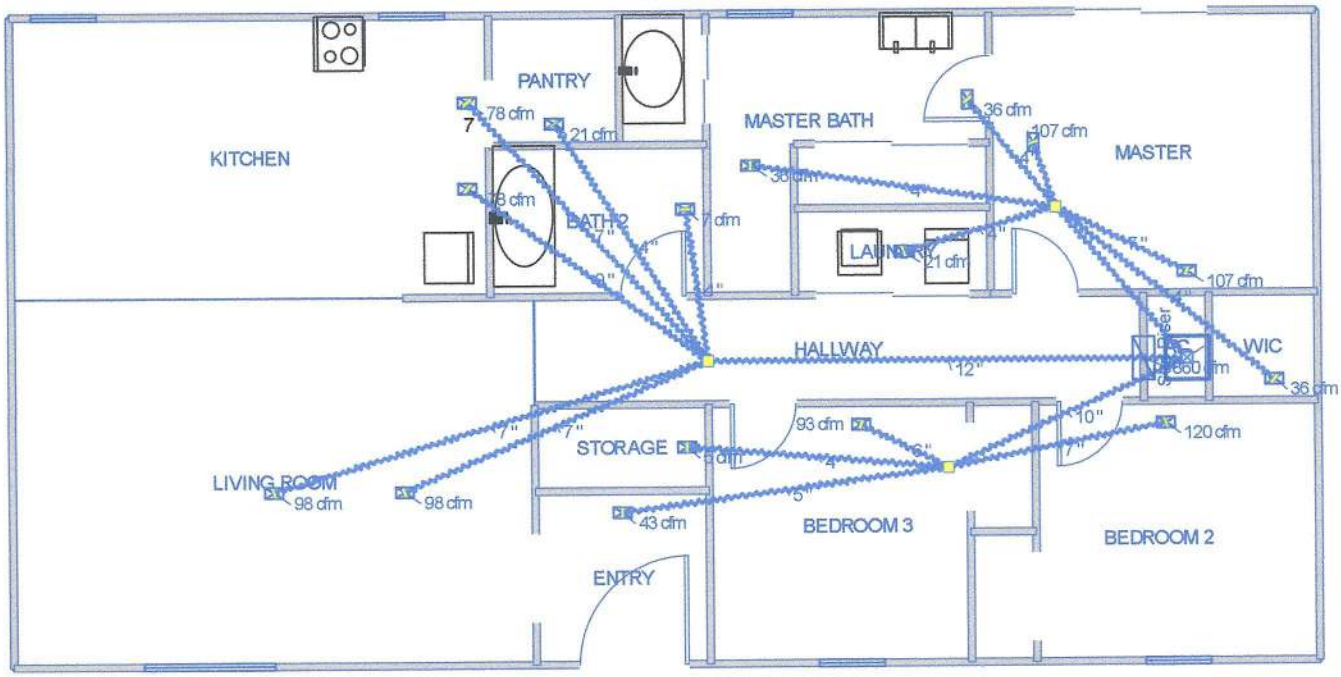
Cooling Equipment Summary

Make	Goodman Mfg.
Trade	GOODMAN
Cond	GSZC160241C
Coil	AVPTC25B14B
AHRI ref	202541735

Efficiency	12.5 EER, 15 SEER
Sensible cooling	15680 Btuh
Latent cooling	6720 Btuh
Total cooling	22400 Btuh
Actual air flow	860 cfm
Air flow factor	0.039 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0.87

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

Level 1



Job #: **Performed for:** Linda Laird 480 SW GRAPEVINE CT FORT WHITE, FL 32038	**Hometown Heating and Air** 399 SW Boston Terrace Fort White, Florida 32038 Phone: 352-316-7273 hometownheatandair@gmail.com	Scale: 1 : 106 Page 1 Right-Suite® Universal 2022 22.0.01 RSU64164 2022-Feb-13 01:50:27 ...uments\Wrightsoft HVAC\LAIRD.rup

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Duct System Summary
Entire House
Hometown Heating and Air

Job:
Date: Feb 12, 2022
By:

399 SW Boston Terrace, Fort White, Florida 32038 Phone: 352-316-7273 Email: hometownheatandair@gmail.com License: CAC1818078

Project Information

For: Linda Laird
480 SW GRAPEVINE CT, FORT WHITE, FL 32038

	Heating	Cooling
External static pressure	0 in H2O	0 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0 in H2O	0 in H2O
Supply / return available pressure	0.000 / 0.000 in H2O	0.000 / 0.000 in H2O
Lowest friction rate	0 in/100ft	0 in/100ft
Actual air flow	860 cfm	860 cfm
Total effective length (TEL)	0 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	96	7	4	0	0	0x 0	VIFx	0	0	
BEDROOM 2	h	1832	120	72	0	0	0x 0	VIFx	0	0	
BEDROOM 3	c	2370	61	93	0	0	0x 0	VIFx	0	0	
ENTRY	h	970	43	38	0	0	0x 0	VIFx	0	0	
KITCHEN	h	1874	78	74	0	0	0x 0	VIFx	0	0	
KITCHEN-A	h	1874	78	74	0	0	0x 0	VIFx	0	0	
LAUNDRY	c	521	6	21	0	0	0x 0	VIFx	0	0	
LIVING ROOM	h	2296	98	90	0	0	0x 0	VIFx	0	0	
LIVING ROOM-A	h	2296	98	90	0	0	0x 0	VIFx	0	0	
MASTER	c	2724	69	107	0	0	0x 0	VIFx	0	0	
MASTER BATH-A	h	847	36	33	0	0	0x 0	VIFx	0	0	
MASTER BATH-B	h	847	36	33	0	0	0x 0	VIFx	0	0	
MASTER-A	c	2724	69	107	0	0	0x 0	VIFx	0	0	
PANTRY	h	176	21	7	0	0	0x 0	VIFx	0	0	
STORAGE	h	65	5	3	0	0	0x 0	VIFx	0	0	
WIC	h	324	36	13	0	0	0x 0	VIFx	0	0	

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
rb3	0x 0	860	860	0	0	0	0	0x 0		VIFx	

ENERGY STAR Single-Family New Homes National HVAC Design Report, Version 3 / 3.1(Rev. 11)

HVAC Designer Responsibilities:
- Complete one National HVAC Design Report for each system design for a house plan, created for either the specific plan configuration (i.e., elevation, option, orientation, & county) of the home to be certified or for a plan that is intended to be built with different configurations (i.e., different elevations, options, and/or orientations). Visit www.energystar.gov/newhomeshvacdesign and see Footnote 2 for more information.
- Obtain efficiency features (e.g., window performance, insulation levels, and infiltration rate) from the builder or Rater. [3]
- Provide the completed National HVAC Design Report to the builder or credentialed HVAC contractor and to the Rater.

1. Design Overview

1.1 Designer name: Matthew McClellan Designer company: Hometown Heating and Air Date: Feb 12, 2022
1.2 Select which party you are providing these design services to: ■ Builder or ☐ Credentialed HVAC contractor
1.3 Name of company you are providing these design services to (if different than Item 1.1):
1.4 Area that system serves: ■ Whole-house ☐ Upper-level ☐ Lower-level ☐ Other
1.5 Is cooling system for a temporary occupant load? ☐ Yes ■ No
1.6 House plan: Check box to indicate whether the system design is site-specific or part of a group:
■ Site-specific design. Option(s) & elevation(s) modeled:
☐ Group design. Group #: 0 out of 0 total groups for this house plan. Configuration modeled:

2. Dwelling Unit Mechanical Ventilation System Design ("Vent System") & Inlets in Return Duct	Designer Verified
Airflow:	
2.1 Ventilation airflow design rate & run-time meet the requirements of ASHRAE 62.2-2010, 2013 or 2016	☐
2.2 Ventilation airflow rate required by 62.2 for a continuous system: 0 CFM	-
2.3 Design for this system: Vent. airflow rate: CFM Run-time per cycle: 0 minutes Cycle time: 0 minutes	-
System Type & Controls:	
2.4 Specified system type: ☐ Supply ☐ Exhaust ■ Balanced	-
2.5 Specified control location: (e.g., Master bath, utility room)	-
2.6 Specified controls allow the system to operate automatically, without occupant intervention.	☐
2.7 Specified controls include a readily-accessible ventilation override and a label has also been specified if its function is not obvious (e.g., a label is required for a toggle wall switch, but not for a switch that's on the ventilation equipment).	☐
2.8 For any outdoor air inlet designed to connect to a ducted return of the HVAC system, specified controls automatically restrict airflow using a motorized damper during ventilation off-cycle and occupant override.	☐
Sound: 2.9 The fan of the specified system is rated ≤ 3 sones if intermittent and ≤ 1 sone if continuous, or exempted	☐
Efficiency:	
2.10 If Vent System controller operates the HVAC fan, then HVAC fan operation is intermittent and either the fan type in Item 4.7 is ECM / ICM or the controls will reduce the run-time by accounting for HVAC system heating or cooling hours.	☐
2.11 If bathroom fans are specified as part of the system, then they are ENERGY STAR certified	☐
Air Inlet Location: (Complete this section if system has a specified air inlet location; otherwise check "N/A")	☐ N/A
2.12 Inlet pulls ventilation air directly from outdoors and not from attic, crawlspace, garage, or adjacent dwelling unit	☐
2.13 Inlet is ≥ 2 ft. above grade or roof deck; ≥ 10 ft. of stretched-string distance from known contamination sources (e.g., stack, vent, exhaust, vehicles) not exiting the roof, and ≥ 3 ft. from known sources exiting the roof	☐

3. Room-by-Room Heating & Cooling Loads

3.1 Room-by-room loads calculated using: ■ Unabridged ACCA Manual J v8 ☐ 2013 ASHRAE Fundamentals ☐ Other per AHJ										-
3.2 Indoor design temperatures used in loads are 70°F for heating and 75°F for cooling										☐
3.3 Outdoor design temperatures used in loads: (See Footnote 13 and energystar.gov/hvacdesigntemps) County & State, or US Territory, selected: Alachua, FL Cooling season: 92 °F Heating season: 33 °F										-
3.4 Number of occupants used in loads: 5										-
3.5 Conditioned floor area used in loads: 1785 Sq. Ft.										-
3.6 Window area used in loads: 152 Sq. Ft.										-
3.7 Predominant window SHGC used in loads: 0.56										-
3.8 Infiltration rate used in loads: Summer: 0.26 Winter: 0.49										-
3.9 Mechanical ventilation rate used in loads: 0 CFM										-
Loads At Design Conditions (kBtuh)		**N**	**NE**	**E**	**SE**	**S**	**SW**	**W**	**NW**	-
Cooling	3.10 Sensible heat gain (By orientation)	21.2	19.3	16.1	19.3	21.2	19.3	16.1	19.5	-
	3.11 Latent heat gain (Not by orientation)	3.4								-
	3.12 Total heat gain (By orientation)	24.6	22.6	19.4	22.7	24.6	22.6	19.5	22.8	-
	3.13 Maximum – minimum total heat gain (Item 3.12) across orientations = 5.2 kBtuh						Variation is ≤ 6 kBtuh			■
Heating	3.14 Total heat loss (Not by orientation)	26.0								-

ENERGY STAR Single-Family New Homes
National HVAC Design Report, Version 3 / 3.1(Rev. 11)

4. Heating & Cooling Equipment Selection		Designer Verified
4.1 Equipment selected per ACCA Manual S (see Footnote 25 & 26).		☐
Air Conditioner / Heat Pump (Complete if air conditioner or heat pump will be installed; otherwise check "N/A")		☐ N/A
4.2 Equipment type:	☐ Cooling-only air conditioner or ■ Cooling & heating heat pump	-
4.3 Condenser manufacturer & model:	Goodman Mfg. GSZC160241C	-
4.4 Evaporator / fan coil manufacturer & model:	Goodman Mfg. AVPTC25B14B	-
4.5 AHRI reference #:	202541735	-
4.6 AHRI listed efficiency:	12.5 / 15 EER / SEER Air-source heat pump: 8.5 HSPF Ground-source heat pump: COP	-
4.7 Evaporator fan type:	☐ PSC ☐ ECM / ICM ■ Other:	-
4.8 Compressor type:	■ Single-speed ☐ Two-speed ☐ Variable-speed	-
4.9 Latent capacity at design conditions, from OEM expanded performance data:	2.4 kBtuh	-
4.10 Sensible capacity at design conditions, from OEM expanded performance data:	19.4 kBtuh	-
4.11 Total capacity at design conditions, from OEM expanded performance data:	21.9 kBtuh	-
4.12 Air-source heat pump capacity:	At 17°F: 14.7 kBtuh At 47°F: 22.4 kBtuh ☐ N/A	-
4.13 Cooling sizing % = Total capacity (Item 4.11) divided by maximum total heat gain (Item 3.12):	89 %	-
4.14 Complete this Item if Condition B Climate will be used to select sizing limit in Item 4.15. Otherwise, check "N/A":	■ N/A	-
4.14.1 Load sensible heat ratio = Max. sensible heat gain (Item 3.10) / Max. total heat gain (Item 3.12)	= 86%	-
4.14.2 HDD / CDD ratio (Visit energystar.gov/hvacdesigntemps to determine this value for the design location)	= 0.2	-
4.15 Check box of applicable cooling sizing limit from chart below:		-

Equipment Type (Per Item 4.2) & Climate Condition (Per Item 4.14)	Compressor Type (Per Item 4.8)		
	Single-Speed	Two-Speed	Variable-Speed
For Cooling-Only Equipment or For Cooling Mode of Heat Pump in Condition A Climate	☐ Recommended: 90 – 115% Allowed: 90 – 130%	☐ Recommended: 90 – 120% Allowed: 90 – 140%	☐ Recommended: 90 – 130% Allowed: 90 – 160%
For Cooling Mode of Heat Pump in Condition B Climate	☐ 90% - 100%, plus 15 kBtuh	☐ 90% - 100%, plus 15 kBtuh	☐ 90% - 100%, plus 15 kBtuh

4.16 Cooling sizing % (4.13) is within cooling sizing limit (4.15)	☐
Furnace (Complete if furnace will be installed; otherwise check "N/A")	■ N/A
4.17 Furnace manufacturer & model:	-
4.18 Listed efficiency: AFUE	-
4.19 Total capacity: kBtuh	-
4.20 Heating sizing % = Total capacity (Item 4.19) divided by total heat loss (Item 3.14): 0%	-
4.21 Check box of applicable heating sizing limit from chart below:	-

When Used for Heating Only	When Paired With Cooling
☐ 100 - 140%	☐ Recommended: 100 – 140% Allowed: 100 – 400%

4.22 Heating sizing % (4.20) is within heating sizing limit (4.21)	☐
5. Duct Design (Complete if heating or cooling equipment will be installed with ducts; otherwise check "N/A")	☐ N/A
5.1 Duct system designed for the equipment selected in Section 4, per ACCA Manual D	■
5.2 Design HVAC fan airflow: Cooling mode 860 CFM Heating mode 860 CFM	-
5.3 Design HVAC fan speed setting (e.g., low, medium, high): Cooling mode Medium Heating mode Medium	-
5.4 Design total external static pressure (corresponding to the mode with the higher airflow in Item 5.2): 0 IWC	-
5.5 Room-by-room design airflows documented below (which must sum to the mode with the higher airflow in Item 5.2)	-

	Room Name	Design Airflow (CFM)		Room Name	Design Airflow (CFM)		Room Name	Design Airflow (CFM)
1	AC	0	12	PANTRY	7	23		
2	BATH 2	4	13	STORAGE	3	24		
3	BEDROOM 2	72	14	WIC	13	25		
4	BEDROOM 3	93	15			26		
5	ENTRY	38	16			27		
6	HALLWAY	0	17			28		
7	KITCHEN	148	18			29		
8	LAUNDRY	21	19			30		
9	LIVING ROOM	181	20			31		
10	MASTER	215	21			32		
11	MASTER BATH	67	22				Total for all rooms	860

ANSI / RESNET / ACCA 310 HVAC Design Report (1,2)

1. Design Basis & Architectural Scope					
1.1 Design description (optional):					
1.2 Design company:	Hometown Heating and Air	Designer name:	Matthew McClellan	Date:	Feb 12, 2022
1.3 Software name and version used to complete design:		Right-Suite® Universal 2022 22.0.01 RSU64164			N/A
For a Dwelling, Townhouse, or Dwelling / Sleeping Unit Within (i.e. duplex):					
1.4 Architectural plan name or address of property:					
1.5 Architectural options used in the design(3):					
1.6 Other architectural options that the design can be used with:(4)					
For a Dwelling / Sleeping Unit Not Within a Dwelling or Townhouse (e.g. condo, apartment):					
1.7 Unique ID for bldg. that the dwelling / sleeping unit is in:(5)					
1.8 Architectural plan used in design (e.g. dwelling unit model):					
1.9 Other architectural plans that the design can be used with:(6)					
1.10 Architectural options used in the design:(3)					
1.11 Other architectural options that the design can be used with:(4)					
1.12 Dwelling / sleeping unit location used in design:(7)					

2. Dwelling-Unit Mechanical Ventilation System Design			
Ventilation System Type & Control Location:	System 1	System 2	System 2
2.1 Unique name or ID for each system:(8)			
2.2 Vent. equipment manufacturer & model #:(9)			
2.3 Specified system type:(10)	Balanced w/o Recovery		
2.4 Specified control location:(11)			
2.5 Ventilation zone name(s) served by system:(12)	Entire House		
Ventilation Zone Served by Ventilation System:	Zone 1	Zone 2	Zone 3
2.6 Ventilation zone name:(12)	Entire House		
2.7 Design basis:(13)	Other		
2.8 Floor area (sq. ft.) and # bedrooms in vent. zone:	1785 3		
2.9 Ventilation design airflow rate (CFM):(14)			
2.10 Vent. runtime per cycle & cycle time (mins):	0 of every 0		
2.11 Time-averaged mechanical vent. rate (CFM):(15)			

3. Heat Gain & Heat Loss Loads					
3.1 Design basis for the loads:(16)	ACCA Manual J 8th Edition	3.2 Load methodology:(17)		Room-by-Room	
3.3 Indoor design temperatures used in loads (°F):		Heating Season:	68	Cooling Season:	75
3.4 Outdoor design temperatures used in loads (°F):(18)		Heating Season:	33	Cooling Season:	92
3.5 Outdoor design temperature location & data source:(19)		Alachua, FL		Data Source:	ASHRAE 2017

Zone-Specific Inputs & Loads at Design Conditions		Zone 1			Zone 2			Zone 3		
3.6 Name of heated or cooled zone:(20)		Entire House								
3.7 Occupants & total occup. internal gains (Btuh):(21)		5 1150								
3.8 Total non-occupant internal gains (Btuh):		4400								
3.9 Conditioned floor area (sq. ft.):(22)		1785								
3.10 Window area (sq. ft.):(23)		152								
3.11 Predominant window SHGC:(24)		0.6								
3.12 Predominant insulation nominal R-value:(24,25)		Wall: 13.0 Ceiling: 30.0			Wall: Ceiling:			Wall: Ceiling:		
3.13 Infiltration rate (Qualitative or ACH50):(26)		5.0								
3.14 Time-averaged mechanical vent. rate (CFM):		0								
3.15 Heat gain (kBtuh):(27)		Sensible	Latent	Total	Sensible	Latent	Total	Sensible	Latent	Total
	N	21.2	3.4	24.6						
	NE	19.3	3.4	22.6						
	E	16.1	3.4	19.4						
	SE	19.3	3.4	22.7						
	S	21.2	3.4	24.6						
	SW	19.3	3.4	22.6						
	W	16.1	3.4	19.5						
	NW	19.5	3.4	22.8						
3.16 Maximum – minimum total heat gain (kBtuh):(28)				5.2						
3.17 Total heat loss (kBtuh):		26.0								

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4. Heating & Cooling Equipment Selection	1	2	3
Air Conditioners, Heat Pumps, & Other Cooling Equipment (If none of these will be installed, check "N/A")			N/A ☐
4.1 Unique name or ID for each system:	Entire House		
4.2 Zone that system serves (See Item 3.6):	Entire House		
4.3 Equipment type:(29)	HP		
4.4 Evaporator / fan coil mfr. & model #:(30)	GOOD AVPTC25B14B		
4.5 Condenser mfr. & model #:(30)	GOOD GSZC160241C N/A ☐	N/A ■	N/A ■
4.6 AHRI ref. #, or check box for alt. OEM doc.:(31)	202541735 OEM	OEM ■	OEM ■
4.7 If AC / HP, rated cooling efficiency:(32)	15 SEER N/A ☐	N/A ■	N/A ■
4.8 If HP, rated heating efficiency:(33)	8.5 HSPF N/A ☐	N/A ■	N/A ■
4.9 If HP, ratio of max. to min. rated capacity:	1.5 N/A ☐	N/A ■	N/A ■
4.10 If AC / HP, blower fan motor & speed type:(34)	Other Single N/A ☐	N/A ■	N/A ■
4.11 If AC / HP, compressor speed type:(35)	Single N/A ☐	N/A ■	N/A ■
4.12 If AC / HP, meter device type:(36)	N/A ☐	N/A ■	N/A ■
4.13 If TXV or EEV, OEM subcooling target (°F):(37)	0.0 N/A ☐	N/A ■	N/A ■
4.14 Filter performance metric and rating:(38)	N/A ■	N/A ■	N/A ■
Furnaces, Boilers, & Other Heating Equipment (If none of these will be installed, check "N/A")			N/A ☐
4.15 Unique name or ID for each system:			
4.16 Zone that system serves (See Item 3.6):			
4.17 Equipment type:(39)			
4.18 Equipment manufacturer & model #:			
4.19 AHRI ref. #, or check box for alt. OEM doc.:(31)	OEM ■	OEM ■	OEM ■
4.20 If furnace or boiler, rated heating efficiency:	N/A ■	N/A ■	N/A ■
4.21 If furnace, blower fan motor & speed type:(34)	N/A ■	N/A ■	N/A ■
4.22 If furnace or boiler, heating capacity type:(40)	N/A ■	N/A ■	N/A ■
4.23 If furnace or boiler, venting type:(41)	N/A ■	N/A ■	N/A ■
4.24 Filter performance metric and rating:(38)	N/A ■	N/A ■	N/A ■
5. Duct Design (Complete if duct system will be installed; otherwise check "N/A")			N/A ☐
5.1 Unique name or ID for each system:	Entire House		
5.2 Zone that system serves (See Item 3.6):	Entire House		

Design Values for Cooling and Heating Mode	Cooling	Heating	Cooling	Heating	Cooling	Heating
5.3 Design blower fan airflow (CFM):(42)	860	860				
5.4 Design blower fan speed setting:(43)	Medium	Medium				
5.5 Design external static pressure (IWC):(44)	0					

5.6 Room-by-room design airflows (CFM):	Room Name	Airflow	Room Name	Airflow	Room Name	Airflow
Total Design Airflow:	[All rooms]	862	[All rooms]		[All rooms]	
1.	AC	0				
2.	BATH 2	4				
3.	BEDROOM 2	72				
4.	BEDROOM 3	93				
5.	ENTRY	38				
6.	HALLWAY	0				
7.	KITCHEN	148				
8.	LAUNDRY	21				
9.	LIVING ROOM	181				
10.	MASTER	215				
11.	MASTER BATH	67				
12.	PANTRY	7				
13.	STORAGE	3				
14.	WIC	13				
15.						
16.						
17.						
18.						
19.						
20.						

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5.6 Room-by-room design airflows (Continued):	Room Name	Airflow	Room Name	Airflow	Room Name	Airflow
21.						
22.						
23.						
24.						
25.						
26.						
27.						
28.						
29.						
30.						
31.						
32.						
33.						
34.						
35.						

Footnotes

1. The purpose of this report is to document the design information required by ANSI / RESNET / ACCA 310 – a standard for grading the installation of HVAC systems - for a dwelling, townhouse, or dwelling / sleeping unit.The HVAC designer should complete one reportper dwelling, townhouse, or dwelling / sleeping unit that encompasses all HVAC systems(e.g., for a dwelling with two zones, the HVAC system for each zone should be documented in the same report).
2. Note that this report will be reviewed by users of the standard (e.g., a rater) to ensure that the design meets the tolerances defined in Section 4.3 of ANSI / RESNET / ACCA 310. The HVAC systems will not be eligible to earn recognition for proper installation unless alltolerances are met.
3. If the HVAC design documented in this report incorporated one or more options (e.g., media room option), then list those options.
4. If this same HVAC design could be used with other options (e.g., bonus room, balcony with sliding glass door), then list those option(s).
5. For example, the name of the development or the building's address.
6. If this same HVAC design could be used with other plans (e.g., other dwelling unit models) in the building, then list those plan(s).
7. Because the loads are dependent on the dwelling / sleeping unit's location in the building, indicate whether the design is for the TopFloor, a Mid-Level-Floor, or the Bottom-Floor of the building; and either a Corner Unit or Middle Unit that is between two other units.
8. For example, the unique ID might be "Powder Bath Fan" or "Whole-House ERV".
9. The ventilation equipment manufacturer and model number are required to be reported for dwelling / sleeping units not within a dwelling or townhouse;and are optional for dwellings, townhouses, and sleeping / dwelling units within(i.e., duplex).
10. Ventilation system types are: Supply - a supply-only system, Exhaust - an exhaust-only system, Balanced w/o Recov. - a balanced system without energy or heat recovery, ERV - an energy recovery ventilator, HRV - a heat recovery ventilator, Vent.Dehumidifier - a ventilation system with integrated dehumidifier, or Other - any other system type.
11. For example, common ventilation control locations include a bathroom or utility room.
12. For example, the ventilation zone name may be "Whole Dwelling", "Upper Level", "Lower Level", or "Basement".
13. Design basis options are: 62.2-2010 - ASHRAE 62.2-2010, 62.2-2013 - ASHRAE 62.2-2013, 62.2-2016 - ASHRAE 62.2-2016, 62.2-2019 - ASHRAE 62.2 - 2019, or Other - any other ventilation standard.
14. Enter the airflow rate of the ventilation system when operating (e.g., a 50 CFM cycled bath fan has a ventilation airflow rate of 50 CFM).
15. The following formula shall be used to determine the time-averaged ventilation airflow rate: Time Averaged Vent Rate = Vent Rate * Runtime Per Cycle / Cycle Time Where : • Time Averaged Vent Rate = The time - averaged ventilation airflow rate. • Vent Rate = The design's ventilation airflow rate reported in Item 2.9. • Runtime Per Cycle = The runtime per cycle reported in Item 2.10. • Cycle Time = The cycle time reported in Item 2.10.
16. Design basis options for the heat gain and heat loss loads are: ACCA Manual J v8 2013 - ACCA Manual J v8, 2013 edition; ACCA Manual J v8 2016 - ACCA Manual J v8, 2016 edition; 2017 ASHRAE Fund. - 2017 ASHRAE Fundamentals; or Per AHJ - a design basis prescribed by the Authority Having Jurisdiction.
17. Load methodology options are: Room-by-Room or Single Block. Note that for dwellings, townhouses, and dwelling / sleeping units within(i.e., duplex), the room - by - room load methodology must be used.See Fn. 2 for details.
18. Note that the outdoor design temperatures must meet the limits defined in ANSI / RESNET / ACCA 310 Appendix A for the county or U.S.Territory where the project will be constructed.See Fn. 2 for details.
19. The location shall include the city or weather station and the state. The data source options are: ACCA - ACCA Manual J, ASHRAE - ASHRAE Handbook of Fundamentals, or AHJ - design conditions prescribed by the Authority Having Jurisdiction.
20. For example, the heated or cooled zone name may be "Upper Level", "Master Suite", or "Basement".

21. To determine the number of occupants, calculate the number of bedrooms in the zone and add one. ANSI / RESNET / ACCA 310 defines a "bedroom" for one - and two - family dwellings and townhouses as a room or space 70 square feet of floor area or greater, with egress window or skylight, and doorway to the main body of the dwelling unit, that can be used for sleeping. For all other Dwelling Units, a room or space that can be used for sleeping. For all dwelling or sleeping units, the number of bedrooms shall not be less than one. ANSI / RESNET / ACCA 310 defines an "egress window" as an operable window that provides for a means of escapeand access for rescue in the event of an emergencyand with the following attributes : • Has a sill height of not more than 44 inches above the floor;and, • Has a minimum net clear opening of 5.7 sq.ft., opening height of 24 in., and opening width of 20 in.;and, • Is operational from the inside of the room without the use of keys, tools or special knowledge. The number of occupants must fall within the tolerance specified in ANSI / RESNET / ACCA 310. See Fn. 2 for details.

22. The difference between the Conditioned Floor Area (CFA) used in the design and the actual dwelling, townhouse, or dwelling / sleeping unit must fall within the tolerance specified in ANSI / RESNET / ACCA 310. See Fn. 2 for details. Be advised, the CFA will be evaluated using the definition in ANSI / RESNET / ACCA 310, which defines this value, in part, as the floor area of the Conditioned Space Volume within a building or dwelling unit, not including the floor area of attics, crawlspaces, and basements below air sealed and insulated floors.

23. The difference between the window area used in the design and the actual dwelling, townhouse, or dwelling / sleeping unit must fall within the tolerance specified in ANSI / RESNET / ACCA 310. See Fn. 2 for details. Be advised, the window area will be evaluated by calculating it using the on - site inspection protocol provided in Normative Appendix B of ANSI / RESNET / ICC 301, which instructs the user to measure the widthand height of the rough opening for the windowand round to the nearest inch, and then to use these measurements to calculate window area, rounding to the nearest tenth of a square foot. See https ://codes.iccsafe.org/content/chapter/16191/ for the complete protocol.

24. "Predominant" is defined as the SHGC or R-value used in the greatest amount of window, wall, or ceiling area in the zone.

25. If both cavity and continuous insulation are used, report the sum of the nominal R-value of the cavity and continuous insulation.

26. The infiltration rate shall be reported using a qualitative input (i.e., Tight, Semi-Tight, Average, Semi-Leaky, Leaky) or in units of ACH50.

27. Provide loads for the orientation(s) that the design is intended to be used in (e.g., N, S, E, W), where orientation is defined as the direction that the front door of the dwelling is facing. For example, if a site - specific design has been completed for a single project, only the loads for the single orientation of that project need to be provided.

28. If the heat gain has been provided for multiple orientations, then the difference between the max. and min. total heat gain across the orientations specified must be reported and fall within the tolerance specified in ANSI / RESNET / ACCA 310. See Fn. 2 for details.

29. Equipment type options are: AC - Air Conditioner, HP - Heat Pump, MNAC - Mini-Split Air Conditioner, MNHP - Mini-Split Heat Pump, MTAC - Multi - Split Air Conditioner, MTHP - Multi - Split Heat Pump, and Other - any other cooling equipment type.

30. For single-package systems or systems without a condenser (e.g., evaporative cooler), provide manufacturer and model number in Item 4.4 and select "N / A" for Item 4.5.

31. If an AHRI Reference Number is not available, OEM-provided documentation shall be collected with the rated efficiency of the equipment. If the equipment contains multiple components, the rated efficiency shall reflect the specific combination of indoorand outdoor components, along with confirmation from the OEM that the two components are designed to be used together.

32. For example, if the metric for the rated efficiency of the equipment is SEER, then its SEER rating shall be reported; if the metric is EER, then its EER rating shall be reported; if both SEERand EEER, then both rated values shall be reported.

33. For example, if the metric for the rated efficiency of the equipment is HSPF, then its HSPF rating shall be reported; if the metric is COP, then its COP rating shall be reported; if both HSPFand COP, then both rated values shall be reported.

34. Blower fan motor type options are: PSC - Permanent Split Capacitor, ECM - Electronically Commutated Motor, or Other - any other motor type. For blower fan speed type, while equipment typically has multiple speed settings to select from during installation, this parameter is related to the number of operational speeds that the blower fan is capable of : Single - a system that operates at no more than one speed setting each for heating modeand cooling mode, Two - a system that can operate at no more than two speeds each for heating modeand cooling mode, Variable - a system that can operate at more than two speeds.

35. The compressor speed type is related to the number of operational speeds that the compressor is capable of: Single - a system that operates at no more than one speed setting each for heating modeand cooling mode, Two - a system that can operate at no more than two speeds each for heating modeand cooling mode, Variable - a system that can operate at more than two speeds.

36. Meter device type options are: Piston/Cap - piston / capillary tube, TXV - thermal expansion valve, or EEV - electronic expansion valve.

37. If the meter device type is TXV or EEV, then provide then the OEM-specified subcooling target at the service valve.

38. For example, MERV or FPR.

39. Equipment type options are: Furnace, Boiler, or Other - any other heating equipment type.

40. Heating capacity type options are: Single-Stage, Two-Stage, or Modulating.

41. Vent. type options are: Natural Draft - natural draft system, Mech. Draft - mechanical draft system, or Direct Vent - direct-vent appliance.

42. Provide design airflow in cubic feet per minute of air with a density of 0.075 pounds per cubic feet. Airflow at this air density is often referred to as Standard CFM(SCFM) and represents air at 68 °F, 50 % relative humidity, and at a barometric pressure of 29.92" Hg.

43. This is the OEM setting that corresponds with the design blower fan airflow. Common examples include low, medium-low, medium, medium - high, and high, but also may be defined in terms of dip - switch settings or other classifications