



Load Short Form
Entire House
High Springs Electric

Job:
Date: Jun 16, 2022
By: Donna Brackeen

Project Information

For: Wentworth Residence
Columbia County

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	33	92	Method	Simplified
Inside db (°F)	70	75	Construction quality	Average
Design TD (°F)	37	17	Fireplaces	0
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	33	44		

HEATING EQUIPMENT

Make Goodman Mfg.
Trade GOODMAN
Model GSZ160481B
AHRI ref 201668005

Efficiency 9 HSPF
Heating input
Heating output 47000 Btuh @ 47°F
Temperature rise 0 °F
Actual air flow 0 cfm
Air flow factor 0 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 29 °F

COOLING EQUIPMENT

Make Goodman Mfg.
Trade GOODMAN
Cond GSZ160481B
Coil ASPT49D14A
AHRI ref 201668005

Efficiency 13.0 EER, 16 SEER
Sensible cooling 31850 Btuh
Latent cooling 13650 Btuh
Total cooling 45500 Btuh
Actual air flow 1517 cfm
Air flow factor 0.041 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)
(Rest of House)	2230	36435	40593	0	1662
(Unconditioned)	605	0	0	0	0
Entire House	2836	36435	37048	0	1517
Other equip loads		0	0		
Equip. @ 1.00 RSM			37048		
Latent cooling			5211		
TOTALS	2836	36435	42260	0	1517

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



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Project Information

For: Wentworth Residence
Columbia County

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	33	92	Method	Simplified
Inside db (°F)	70	75	Construction quality	Average
Design TD (°F)	37	17	Fireplaces	0
Daily range	-	M		
Inside humidity (%)	50	50		
Moisture difference (gr/lb)	33	44		

HEATING EQUIPMENT

Make	n/a
Trade	n/a
Model	n/a
AHRI ref	n/a
Efficiency	n/a
Heating input	
Heating output	0 Btuh
Temperature rise	0 °F
Actual air flow	0 cfm
Air flow factor	0 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	n/a

COOLING EQUIPMENT

Make	n/a
Trade	n/a
Cond	n/a
Coil	n/a
AHRI ref	n/a
Efficiency	n/a
Sensible cooling	0 Btuh
Latent cooling	0 Btuh
Total cooling	0 Btuh
Actual air flow	0 cfm
Air flow factor	0 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
m bd	276	4771	5189	0	212
his	53	1688	552	0	23
m bath	168	2601	1611	0	66
hers	80	2165	702	0	29
pwdr	35	765	724	0	30
laundry	69	426	1133	0	46
kit dining	279	3773	7452	0	305
entrance	91	0	0	0	0
office	123	2530	2567	0	105
pantry	76	2160	1185	0	49
gr rm	383	3929	9833	0	403
foyer	67	1524	1219	0	50
bd2	187	4462	4215	0	173
hall	79	0	0	0	0

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bath	49	732	414	0	17
bd3	188	4908	3798	0	156
ac	27	0	0	0	0
(Rest of House)	2230	36435	40593	0	1662
Other equip loads		0	0		
Equip. @ 1.00 RSM			40593		
Latent cooling			5211		
TOTALS	2230	36435	45805	0	1662

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

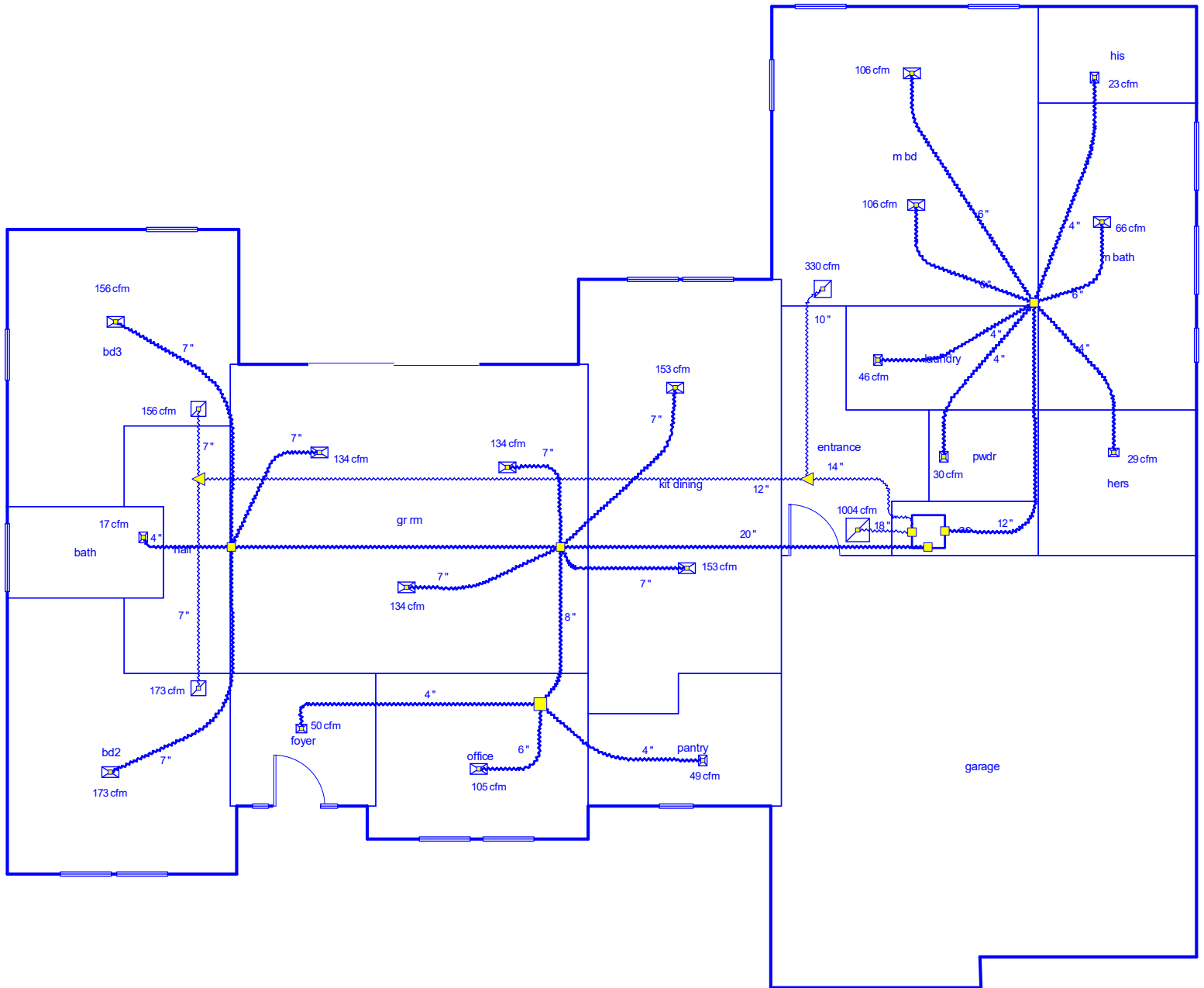


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Manual S Compliance Report

Entire House

High Springs Electric

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Project Information

For: Wentworth Residence
Columbia County

Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	37048	Btuh	Entering coil DB:	77.6°F
Outdoor design WB:	75.8°F	Latent gain:	5211	Btuh	Entering coil WB:	63.8°F
Indoor design DB:	75.0°F	Total gain:	42260	Btuh		
Indoor RH:	50%	Estimated airflow:	1517	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Goodman Mfg.	Model:	GSZ160481B+ASPT49D14A
Actual airflow:	1517	cfm	
Sensible capacity:	39624	Btuh	107% of load
Latent capacity:	5919	Btuh	114% of load
Total capacity:	45543	Btuh	108% of load SHR: 87%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	36435	Btuh	Entering coil DB:	70.0°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Goodman Mfg.	Model:	GSZ160481B+ASPT49D14A
Actual airflow:	0	cfm	
Output capacity:	47000	Btuh	129% of load
Supplemental heat required:	0	Btuh	
Capacity balance:	29	°F	
Economic balance:	-99	°F	

Meets all requirements of ACCA Manual S.





Duct System Summary

Entire House

High Springs Electric

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Project Information

For: Wentworth Residence
Columbia County

	Heating	Cooling
External static pressure	0.50 in H2O	0.50 in H2O
Pressure losses	0.18 in H2O	0.18 in H2O
Available static pressure	0.32 in H2O	0.32 in H2O
Supply / return available pressure	0.176 / 0.144 in H2O	0.176 / 0.144 in H2O
Lowest friction rate	0.101 in/100ft	0.101 in/100ft
Actual air flow	0 cfm	1517 cfm
Total effective length (TEL)	316 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 414	0	17	0.109	4.0	0x0	VIFx	46.5	115.0	st2
bd2	c 4215	0	173	0.101	7.0	0x0	VIFx	58.9	115.0	st2
bd3	c 3798	0	156	0.102	7.0	0x0	VIFx	58.3	115.0	st2
foyer	c 1219	0	50	0.105	4.0	0x0	VIFx	46.9	120.0	st3
gr rm	c 3278	0	134	0.107	7.0	0x0	VIFx	49.7	115.0	st2
gr rm-A	c 3277	0	134	0.141	7.0	0x0	VIFx	29.5	95.0	st2
gr rm-B	c 3277	0	134	0.139	7.0	0x0	VIFx	31.2	95.0	st2
hers	c 702	0	29	0.136	4.0	0x0	VIFx	29.5	100.0	st1
his	c 552	0	23	0.132	4.0	0x0	VIFx	32.8	100.0	st1
kit dining	c 3726	0	153	0.141	7.0	0x0	VIFx	29.8	95.0	st2
kit dining-A	c 3726	0	153	0.137	7.0	0x0	VIFx	33.9	95.0	st2
laundry	c 1133	0	46	0.136	4.0	0x0	VIFx	29.0	100.0	st1
m bath	c 1611	0	66	0.139	6.0	0x0	VIFx	26.5	100.0	st1
m bd	c 2595	0	106	0.131	6.0	0x0	VIFx	34.5	100.0	st1
m bd-A	c 2595	0	106	0.136	6.0	0x0	VIFx	29.5	100.0	st1
office	c 2567	0	105	0.111	6.0	0x0	VIFx	38.7	120.0	st3
pantry	c 1185	0	49	0.109	4.0	0x0	VIFx	42.1	120.0	st3
pwdr	c 724	0	30	0.135	4.0	0x0	VIFx	29.9	100.0	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	0	1256	0.101	576	20.0	0 x 0	VinIFlx	st2
st3	Peak AVF	0	204	0.105	583	8.0	0 x 0	VinIFlx	
st1	Peak AVF	0	406	0.131	517	12.0	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	0	1004	33.2	0.434	568	18.0	0x 0		VIFx	rt2 rt2 rt1
rb4	0x 0	0	156	134.3	0.107	582	7.0	0x 0		VIFx	
rb3	0x 0	0	173	142.4	0.101	646	7.0	0x 0		VIFx	
rb2	0x 0	0	330	91.0	0.158	605	10.0	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
rt2	Peak AVF	0	328	0.101	418	12.0	0 x 0	VinIFlx	rt1
rt1	Peak AVF	0	658	0.101	615	14.0	0 x 0	VinIFlx	