



Manual S Compliance Report

Entire House

Comfort Temp Company

Job:
Date: Jan 27, 2020
By:

4301 NW 6th ST, Gainesville, FL 32609 Phone: 352 275 4022 Fax: 352 376 0523 Email: jay@comforttemp.com Web: www.comforttemp.com

Project Information

For: Strachan

Cooling Equipment

Design Conditions

Outdoor design DB:	92.0°F	Sensible gain:	17983	Btuh
Outdoor design WB:	76.0°F	Latent gain:	2824	Btuh
Indoor design DB:	75.0°F	Total gain:	20807	Btuh
Indoor RH:	50%	Estimated airflow:	933	cfm

Entering coil DB: 77.0°F
Entering coil WB: 63.5°F

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR4030G1+TEM4A0B30S31++TDR
Actual airflow:	933	cfm	
Sensible capacity:	19600	Btuh	109% of load
Latent capacity:	8400	Btuh	297% of load
Total capacity:	28000	Btuh	135% of load SHR: 70%



Heating Equipment

Design Conditions

Outdoor design DB:	33.0°F	Heat loss:	22072	Btuh
Indoor design DB:	68.0°F			

Entering coil DB: 67.1°F

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR4030G1+TEM4A0B30S31++TDR
Actual airflow:	933	cfm	
Output capacity:	27800	Btuh	126% of load
Supplemental heat required:	0	Btuh	

Capacity balance: 27 °F
Economic balance: -99 °F

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	933	cfm	
Output capacity:	6.1	kW	95% of load Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



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Project Information

For: Strachan

Notes:

Design Information

Weather: Gainesville Regional AP, 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	45 gr/lb

Heating Summary

Structure	17083 Btuh
Ducts	4989 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	22072 Btuh

Sensible Cooling Equipment Load Sizing

Structure	11812 Btuh
Ducts	6171 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	17443 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	1587 Btuh
Ducts	1237 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Equipment latent load	2824 Btuh

	Heating	Cooling
Area (ft ²)	1750	1750
Volume (ft ³)	15501	15501
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	98	52

Equipment Total Load (Sen+Lat)	20267 Btuh
Req. total capacity at 0.70 SHR	2.1 ton

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	4TWR4030G1
AHRI ref	8908428
Efficiency	8.5 HSPF
Heating input	
Heating output	27800 Btuh @ 47°F
Temperature rise	27 °F
Actual air flow	933 cfm
Air flow factor	0.042 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	
Capacity balance point = 27 °F	
Backup:	
Input = 6 kW, Output = 20959 Btuh, 100 AFUE	

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	4TWR4030G1
Coil	TEM4A0B30S31++TDR
AHRI ref	8908428
Efficiency	11.5 EER, 14 SEER
Sensible cooling	19600 Btuh
Latent cooling	8400 Btuh
Total cooling	28000 Btuh
Actual air flow	933 cfm
Air flow factor	0.052 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0.86

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

Project Information

For: Strachan

Design Conditions

Location:

Gainesville Regional AP, FL, US
 Elevation: 164 ft
 Latitude: 30°N

Outdoor:

Dry bulb (°F)
 Daily range (°F)
 Wet bulb (°F)
 Wind speed (mph)

Heating

33
 -
 -
 15.0

Cooling

92
 20 (M)
 76
 7.5

Indoor:

Indoor temperature (°F)
 Design TD (°F)
 Relative humidity (%)
 Moisture difference (gr/lb)

Heating

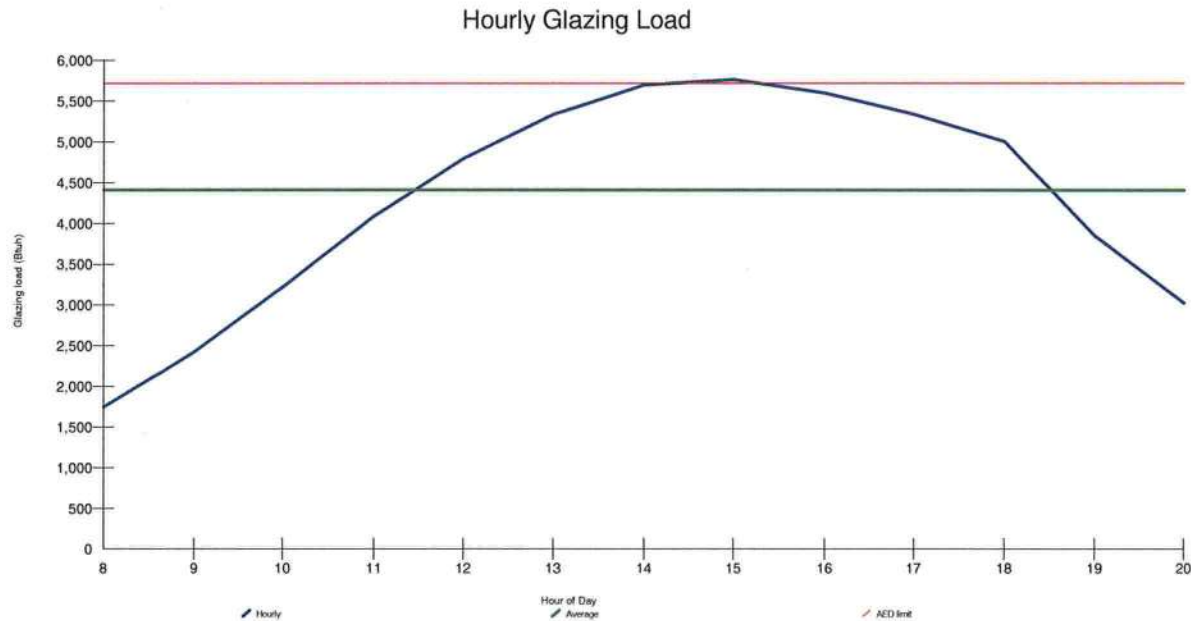
68
 35
 50
 29.0

Cooling

75
 17
 50
 45.4

Infiltration:

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 30.9%.

House does not have adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 41 Btuh (PFG - 1.3*AFG)

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1	Room name					Entire House					Kitchen				
2	Exposed wall					154.0 ft					24.0 ft				
3	Room height					8.9 ft					9.0 ft				
4	Room dimensions					1750.0 ft²					179.0 ft²				
5	Room area					1750.0 ft²					179.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²-F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	n	3.18	2.14	441	372	1185	796	153	153	487	327	
11	G	1D-c2ow	0.570	n	19.95	21.33	45	0	898	960	0	0	0	0	
	G	4A5-2ow	0.470	n	16.45	14.43	24	0	395	346	0	0	0	0	
	W	12C-0sw	0.091	e	3.18	2.14	273	273	870	584	0	0	0	0	
	W	12C-0sw	0.091	s	3.18	2.14	240	180	573	385	0	0	0	0	
	G	1D-c2ow	0.570	s	19.95	25.29	60	0	1197	1518	0	0	0	0	
	W	12C-0sw	0.091	w	3.18	2.14	391	376	1198	804	63	63	201	135	
	G	1D-c2ow	0.570	w	19.95	63.42	15	0	299	951	0	0	0	0	
	C	16B-30ad	0.032	-	1.12	1.66	1750	1750	1960	2912	179	179	200	298	
	F	19C-19cscp	0.049	-	0.59	0.29	191	191	114	55	0	0	0	0	
	F	22A-tpl	0.989	-	34.62	0.00	1559	134	4638	0	179	24	831	0	
										</					

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

Right-J® Worksheet

Entire House

Comfort Temp Company

Job:
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1	Room name					BDR 2					Guest Bath				
2	Exposed wall					16.0 ft					9.0 ft				
3	Room height					9.0 ft					8.0 ft				
4	Room dimensions					1.0 x 157.0 ft					9.0 x 9.0 ft				
5	Room area					157.0 ft²					81.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²-F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6 . . . 11	W	12C-0sw	0.091	n	3.18	2.14	0	0	0	0	0	0	0	0	
	G	1D-c2ow	0.570	n	19.95	21.33	0	0	0	0	0	0	0	0	
	G	4A5-2ow	0.470	n	16.45	14.43	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	s	3.18	2.14	0	0	0	0	0	0	0	0	
	G	1D-c2ow	0.570	s	19.95	25.29	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	w	3.18	2.14	144	129	411	276	72	72	229	154	
	G	1D-c2ow	0.570	w	19.95	63.42	15	0	299	951	0	0	0	0	
	C	16B-30ad	0.032	-	1.12	1.66	157	157	176	261	81	81	91	135	
	F	19C-19cscp	0.049	-	0.59	0.29	0	0	0	0	81	81	48	23	
	F	22A-tpl	0.989	-	34.62	0.00	157	16	554	0	0	0	0	0	
6	c) AED excursion								354				-22		
	Envelope loss/gain							1440	1843			368	290		
12	a) Infiltration							402	103			201	51		
	b) Room ventilation							0	0			0	0		
13	Internal gains:		Occupants @	230		0		0	0	0		0	0		
			Appliances/other					0	0				0		
	Subtotal (lines 6 to 13)							1842	1945			569	342		
14	Less external load							0	0			0	0		
	Less transfer							0	0			0	0		
	Redistribution							0	0			0	0		
	Subtotal							1842	1945			569	342		
15	Duct loads					29%	52%	538	1016	29%	52%	166	178		
	Total room load							2380	2962			736	520		
	Air required (cfm)							101	154			31	27		

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

Right-J® Worksheet

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1	Room name					BDR 3					Flex				
2	Exposed wall					32.0 ft					12.0 ft				
3	Room height					8.0 ft					9.0 ft				
4	Room dimensions					12.0 x 14.0 ft					12.0 x 11.0 ft				
5	Room area					168.0 ft²					132.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	n	3.18	2.14	0	0	0	0	0	0	0	0	
.	G	1D-c2ow	0.570	n	19.95	21.33	0	0	0	0	0	0	0	0	
.	G	4A5-2ow	0.470	n	16.45	14.43	0	0	0	0	0	0	0	0	
11	W	12C-0sw	0.091	e	3.18	2.14	48	48	153	103	0	0	0	0	
.	W	12C-0sw	0.091	s	3.18	2.14	96	66	210	141	108	78	248	167	
.	G	1D-c2ow	0.570	s	19.95	25.29	30	0	598	759	30	0	598	759	
.	W	12C-0sw	0.091	w	3.18	2.14	112	112	357	240	0	0	0	0	
.	G	1D-c2ow	0.570	w	19.95	63.42	0	0	0	0	0	0	0	0	
.	C	16B-30ad	0.032	-	1.12	1.66	168	168	188	280	132	132	148	220	
.	F	19C-19cscp	0.049	-	0.59	0.29	0	0	0	0	0	0	0	0	
.	F	22A-tpl	0.989	-	34.62	0.00	168	32	1108	0	132	12	415	0	
6	c) AED excursion									48				77	
	Envelope loss/gain								2614	1570			1410	1223	
12	a) Infiltration								715	183			302	77	
	b) Room ventilation								0	0			0	0	
13	Internal gains:		Occupants @ 230				0		0	0	0		0	0	
	Subtotal (lines 6 to 13)								3329	1753			1712	1300	
14	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								0	0			0	0	
	Subtotal								3329	1753			1712	1300	
15	Duct loads						29%	52%	972	916	29%	52%	500	679	
	Total room load								4302	2668			2212	1979	
	Air required (cfm)								182	138			93	103	

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

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1	Room name					Family Room					Dining			
2	Exposed wall					4.0 ft					11.0 ft			
3	Room height					9.0 ft					9.0 ft			
4	Room dimensions					1.0 x 399.0 ft					11.0 x 12.0 ft			
5	Room area					399.0 ft²					132.0 ft²			
	Ty	Construction number	U-value (Btuh/ft²-F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.18	2.14	0	0	0	0	99	60	191	128
11	G	1D-c2ow	0.570	n	19.95	21.33	0	0	0	0	15	0	299	320
	G	4A5-2ow	0.470	n	16.45	14.43	0	0	0	0	24	0	395	346
	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.18	2.14	36	36	115	77	0	0	0	0
	G	1D-c2ow	0.570	s	19.95	25.29	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.18	2.14	0	0	0	0	0	0	0	0
	G	1D-c2ow	0.570	w	19.95	63.42	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	1.12	1.66	399	399	447	664	132	132	148	220
	F	19C-19cscp	0.049	-	0.59	0.29	0	0	0	0	0	0	0	0
	F	22A-tpl	0.989	-	34.62	0.00	399	4	138	0	132	11	381	0

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4301 NW 6th ST, Gainesville, FL 32609 Phone: 352 275 4022 Fax: 352 376 0523 Email: jay@comforttemp.com Web: www.comforttemp.com

Room name Exposed wall Room height Room dimensions Room area					Master Bedroom 35.0 ft 9.0 ft 1.0 x 329.0 ft heat/cool 329.0 ft²					Master Bath 11.0 ft 9.0 ft 10.0 x 11.0 ft heat/cool 110.0 ft²				
Ty	Construction number	U-value (Btuh/ft²-F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
				Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	n	3.18	2.14	189	159	506	340	0	0	0	0
11	G	1D-c2ow	0.570	n	19.95	21.33	30	0	598	640	0	0	0	0
	G	4A5-2ow	0.470	n	16.45	14.43	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	e	3.18	2.14	126	126	401	269	99	99	315	212
	W	12C-0sw	0.091	s	3.18	2.14	0	0	0	0	0	0	0	0
	G	1D-c2ow	0.570	s	19.95	25.29	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.18	2.14	0	0	0	0	0	0	0	0
	G	1D-c2ow	0.570	w	19.95	63.42	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	1.12	1.66	329	329	368	547	110	110	123	183
	F	19C-19cscp	0.049	-	0.59	0.29	0	0	0	0	110	110	65	32
	F	22A-tpl	0.989	-	34.62	0.00	329	35	1212	0	0	0	0	0

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

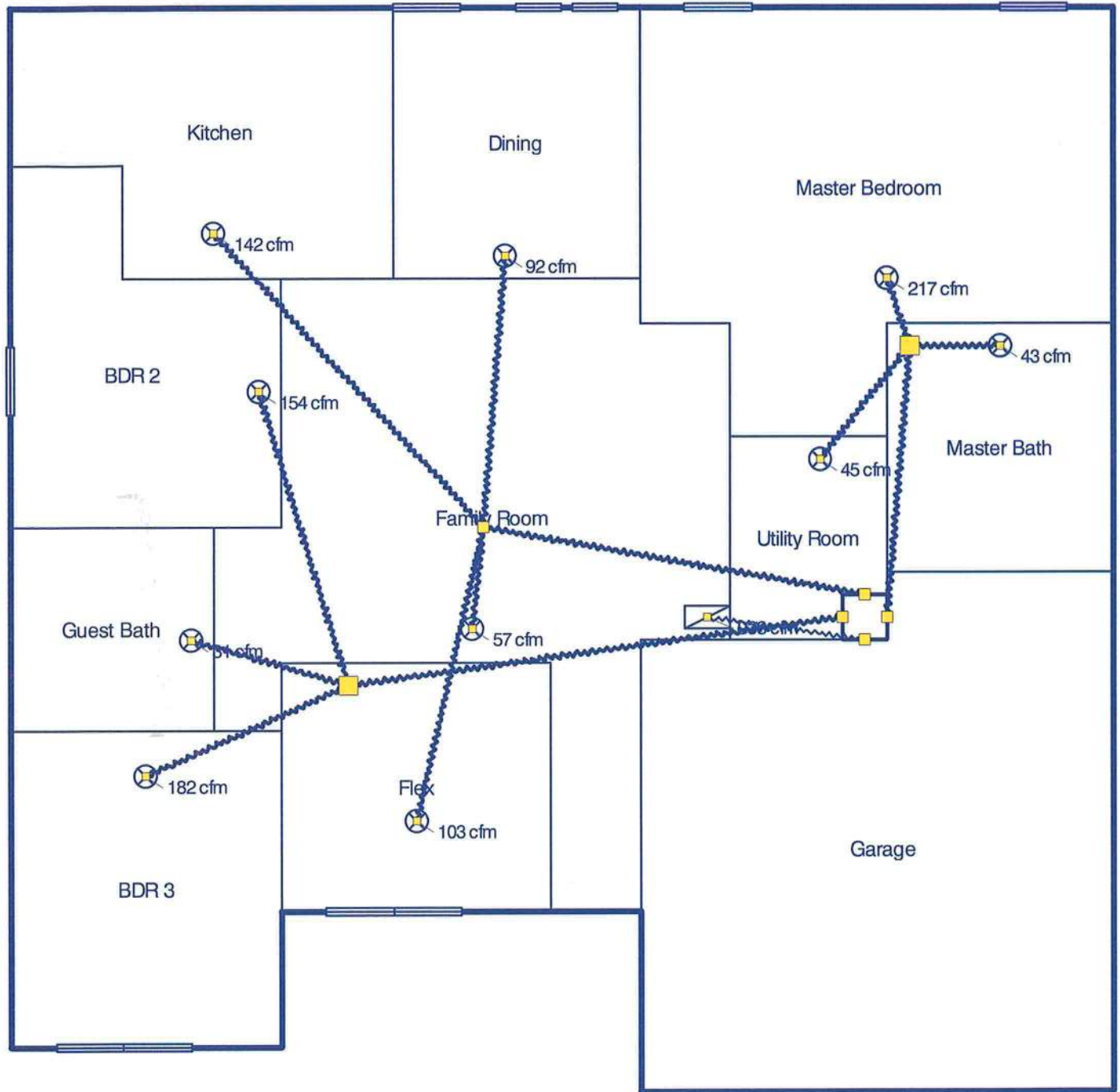
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1	Room name					Utility Room								
2	Exposed wall					0 ft								
3	Room height					9.0 ft					heat/cool			
4	Room dimensions					7.0 x 9.0 ft								
5	Room area					63.0 ft²								
	Ty	Construction number	U-value (Btu/h/ft²·°F)	Or	HTM (Btu/h/ft²)		Area (ft²) or perimeter (ft)		Load (Btu/h)		Area or perimeter		Load	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.18	2.14	0	0	0	0				
11	G	1D-c2ow	0.570	n	19.95	21.33	0	0	0	0				
	G	4A5-2ow	0.470	n	16.45	14.43	0	0	0	0				
	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0				
	W	12C-0sw	0.091	s	3.18	2.14	0	0	0	0				
	G	1D-c2ow	0.570	s	19.95	25.29	0	0	0	0				
	W	12C-0sw	0.091	w	3.18	2.14	0	0	0	0				
	G	1D-c2ow	0.570	w	19.95	63.42	0	0	0	0				
	C	16B-30ad	0.032	-	1.12	1.66	63	63	71	105				
	F	19C-19cscop	0.049	-	0.59	0.29	0	0	0	0				
	F	22A-tpl	0.989	-	34.62	0.00	63	0	0	0				

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



Level 2



Job #:
Performed for:
Strachan

Comfort Temp Company
4301 NW 6th ST
Gainesville, FL 32609
Phone: 352 275 4022 Fax: 352 376 0523
www.comforttemp.com jay@comforttemp.com

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Level 1

Job #:
Performed for:
Strachan

Comfort Temp Company
4301 NW 6th ST
Gainesville, FL 32609
Phone: 352 275 4022 Fax: 352 376 0523
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Duct System Summary

Entire House

Comfort Temp Company

Job:
Date: Jan 27, 2020
By:

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Project Information

For: Strachan

	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	933 cfm	933 cfm
Total effective length (TEL)	163 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
BDR 2	c 2962	101	154	0	0	0x0	VIFx	35.8	90.0	st3
BDR 3	h 2668	182	138	0	0	0x0	VIFx	32.1	90.0	st3
Dining	h 1552	92	81	0	0	0x0	VIFx	29.3	90.0	st1
Family Room	c 1096	44	57	0	0	0x0	VIFx	21.8	90.0	st1
Flex	c 1979	93	103	0	0	0x0	VIFx	30.6	90.0	st1
Guest Bath	h 520	31	27	0	0	0x0	VIFx	29.5	90.0	st3
Kitchen	c 2738	127	142	0	0	0x0	VIFx	35.0	90.0	st1
Master Bath	h 711	43	37	0	0	0x0	VIFx	16.0	90.0	st2
Master Bedroom	h 2892	217	150	0	0	0x0	VIFx	15.2	90.0	st2
Utility Room	c 865	4	45	0	0	0x0	VIFx	18.4	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
st2	Peak AVF	263	232	0	0	0	0 x 0	VinIFix	
st1	Peak AVF	356	382	0	0	0	0 x 0	VinIFix	
st3	Peak AVF	314	319	0	0	0	0 x 0	VinIFix	



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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	0x0	933	933	37.1	0	0	0	0x 0		VFX	