



Manual S Compliance Report

Entire House

Comfort Temp Company

Job:
Date: Mar 02, 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: Vercher, Red Door Homes
773 Indian Springs DR, Lake City, FL

Cooling Equipment

Design Conditions

Outdoor design DB:	92.0°F	Sensible gain:	24989	Btuh	Entering coil DB:	75.0°F
Outdoor design WB:	76.0°F	Latent gain:	5400	Btuh	Entering coil WB:	62.5°F
Indoor design DB:	75.0°F	Total gain:	30389	Btuh		
Indoor RH:	50%	Estimated airflow:	1167	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Trane	Model:	4TWR4036G1+TEM4A0B36S31++TDR	
Actual airflow:	1167	cfm		
Sensible capacity:	26095	Btuh	104% of load	
Latent capacity:	6382	Btuh	118% of load	
Total capacity:	32477	Btuh	107% of load	SHR: 80%

Heating Equipment

Design Conditions

Outdoor design DB:	33.0°F	Heat loss:	32806	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:	Trane	Model:	4TWR4036G1+TEM4A0B36S31++TDR	
Actual airflow:	1167	cfm		
Output capacity:	26342	Btuh	80% of load	Capacity balance: 32 °F
Supplemental heat required:	6464	Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip			
Manufacturer:		Model:		
Actual airflow:	1167	cfm		
Output capacity:	5.6	kW	59% of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



Project Information

For: Vercher, Red Door Homes
773 Indian Springs DR, Lake City, FL

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

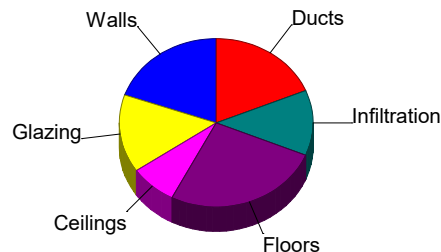
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Average
0

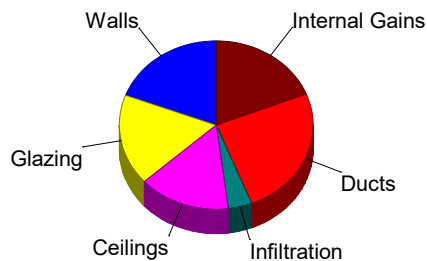
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.4	6444	19.6
Glazing	16.9	4915	15.0
Doors	0	0	0
Ceilings	1.1	2568	7.8
Floors	3.8	8619	26.3
Infiltration	1.9	4110	12.5
Ducts		6150	18.7
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		32806	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.5	4805	19.2
Glazing	15.1	4367	17.5
Doors	0	0	0
Ceilings	1.7	3816	15.3
Floors	0	0	0
Infiltration	0.5	998	4.0
Ducts		6263	25.1
Ventilation		0	0
Internal gains		4740	19.0
Blower		0	0
Adjustments		0	0
Total		24989	100.0



Latent Cooling Load = 5400 Btuh
Overall U-value = 0.095 Btuh/ft²-°F

Data entries checked.

Project Information

For: Vercher, Red Door Homes
773 Indian Springs DR, Lake City, FL

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 26656 Btuh
Ducts 6150 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Humidification 0 Btuh
Piping 0 Btuh
Equipment load 32806 Btuh

Sensible Cooling Equipment Load Sizing

Structure 18726 Btuh
Ducts 6263 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Blower 0 Btuh
Use manufacturer's data n
Rate/swing multiplier 0.97
Equipment sensible load 24239 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft²)	2236	2236
Volume (ft³)	20133	20133
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	107	54

Latent Cooling Equipment Load Sizing

Structure 4249 Btuh
Ducts 1151 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Equipment latent load 5400 Btuh

Equipment Total Load (Sen+Lat) 29640 Btuh
Req. total capacity at 0.72 SHR 2.8 ton

Heating Equipment Summary

Make Trane
Trade TRANE
Model 4TWR4036G1
AHRI ref 201763659

Efficiency 8.2 HSPF
Heating input 34400 Btuh @ 47°F
Heating output 27 °F
Temperature rise 1167 cfm
Actual air flow 0.036 cfm/Btuh
Air flow factor 0.50 in H2O
Static pressure
Space thermostat
Capacity balance point = 32 °F

Backup:
Input = 6 kW, Output = 19201 Btuh, 100 AFUE

Cooling Equipment Summary

Make Trane
Trade TRANE
Cond 4TWR4036G1
Coil TEM4A0B36S31++TDR
AHRI ref 201763659

Efficiency 11.5 EER, 14 SEER
Sensible cooling 25200 Btuh
Latent cooling 9800 Btuh
Total cooling 35000 Btuh
Actual air flow 1167 cfm
Air flow factor 0.047 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.82

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

Project Information

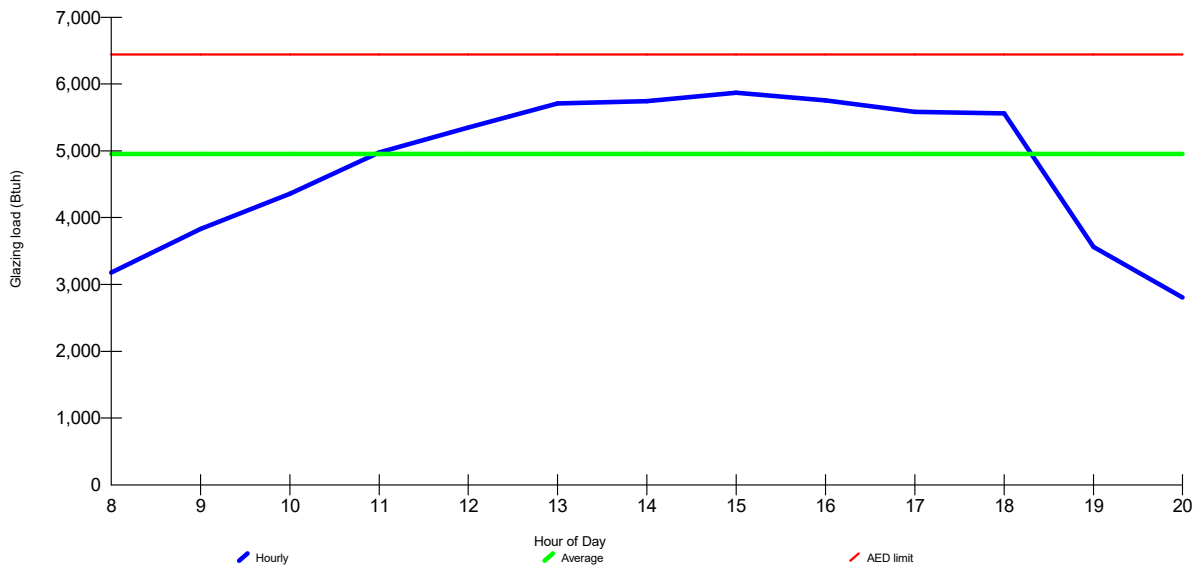
For: Vercher, Red Door Homes
 773 Indian Springs DR, Lake City, FL

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation:	164 ft	Design TD (°F)		35	17
Latitude:	30°N	Relative humidity (%)		50	50
		Moisture difference (gr/lb)		29.0	45.4
Outdoor:		Heating	Cooling	Infiltration:	
Dry bulb (°F)		33	92		
Daily range (°F)		-	20 (M)		
Wet bulb (°F)		-	76		
Wind speed (mph)		15.0	7.5		

Test for Adequate Exposure Diversity

Hourly Glazing Load



Maximum hourly glazing load exceeds average by 18.5%.

House has adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 0 Btuh

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Right-J® Worksheet

Entire House

Comfort Temp Company

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Date: Mar 02, 2020
By:

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1	Room name					Master Bath					WIC 1				
2	Exposed wall					12.0 ft					11.0 ft				
3	Room height					9.0 ft 11.0 x 12.0 ft					9.0 ft 5.0 x 6.0 ft				
4	Room dimensions					132.0 ft²					30.0 ft²				
5	Room area														
	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	12B-0sw	0.097	n	3.39	2.53	0	0	0	0	0	0	0	0	
.	G	4A5-2ow	0.470	n	16.45	12.58	0	0	0	0	0	0	0	0	
.	W	12B-0sw	0.097	e	3.39	2.53	0	0	0	0	0	0	0	0	
.	G	4A5-2ow	0.470	e	16.45	32.31	0	0	0	0	0	0	0	0	
11	W	12B-0sw	0.097	s	3.39	2.53	0	0	0	0	45	45	153	114	
	G	10B-w	0.600	s	21.00	12.81	0	0	0	0	0	0	0	0	
	G	1D-c2ow	0.570	s	19.95	21.33	0	0	0	0	0	0	0	0	
	G	4A5-2ow	0.470	s	16.45	12.58	0	0	0	0	0	0	0	0	
	G	4A5-2ow	0.470	s	16.45	12.58	0	0	0	0	0	0	0	0	
	W	12B-0sw	0.097	w	3.39	2.53	108	93	316	235	54	54	183	137	
	G	4A5-2ow	0.470	w	16.45	32.31	15	0	247	485	0	0	0	0	
	C	16B-30ad	0.032	-	1.12	1.66	132	132	148	220	30	30	34	50	
	F	22A-tpl	0.989	-	34.62	0.00	132	12	415	0	30	11	381	0	

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

1	Room name					WIC 2					Office				
2	Exposed wall					6.0 ft					0 ft				
3	Room height					9.0 ft					9.0 ft				
4	Room dimensions					6.0 x 6.0 ft					6.0 x 8.0 ft				
5	Room area					36.0 ft²					48.0 ft²				
	Ty	Construction number	U-value (Btu/h/ft²·°F)	Or	HTM (Btu/h/ft²)		Area (ft²) or perimeter (ft)		Load (Btu/h)		Area (ft²) or perimeter (ft)		Load (Btu/h)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12B-0sw	0.097	n	3.39	2.53	0	0	0	0	0	0	0	0	
11	G	4A5-2ow	0.470	n	16.45	12.58	0	0	0	0	0	0	0	0	
	W	12B-0sw	0.097	e	3.39	2.53	0	0	0	0	0	0	0	0	
	G	4A5-2ow	0.470	e	16.45	32.31	0	0	0	0	0	0	0	0	
	W	12B-0sw	0.097	s	3.39	2.53	54	54	183	137	0	0	0	0	
	G	10B-w	0.600	s	21.00	12.81	0	0	0	0	0	0	0	0	
	G	1D-c2ow	0.570	s	19.95	21.33	0	0	0	0	0	0	0	0	
	G	4A5-2ow	0.470	s	16.45	12.58	0	0	0	0	0	0	0	0	
	G	4A5-2ow	0.470	s	16.45	12.58	0	0	0	0	0	0	0	0	
	W	12B-0sw	0.097	w	3.39	2.53	0	0	0	0	0	0	0	0	
	G	4A5-2ow	0.470	w	16.45	32.31	0	0	0	0	0	0	0	0	
	C	16B-30ad	0.032	-	1.12	1.66	36	36	40	60	48	48	54	80	
F	22A-tpl	0.989	-	34.62	0.00	36	6	208	0	48	0	0	0		
6	c) AED excursion								-6				-2		
	Envelope loss/gain							431	191			54	78		
12	a) Infiltration							101	25			0	0		
	b) Room ventilation							0	0			0	0		
13	Internal gains: Occupants @ 230					0			0	0			0	0	
	Appliances/other								0				0	0	
	Subtotal (lines 6 to 13)							533	216			54	78		
14	Less external load							0	0			0	0		
	Less transfer							0	0			0	0		
	Redistribution							0	0			0	0		
	Subtotal							533	216			54	78		
15	Duct loads					23%	33%	122	71	23%	33%	12	26		
	Total room load							655	287			66	104		
	Air required (cfm)							23	13			2	5		

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

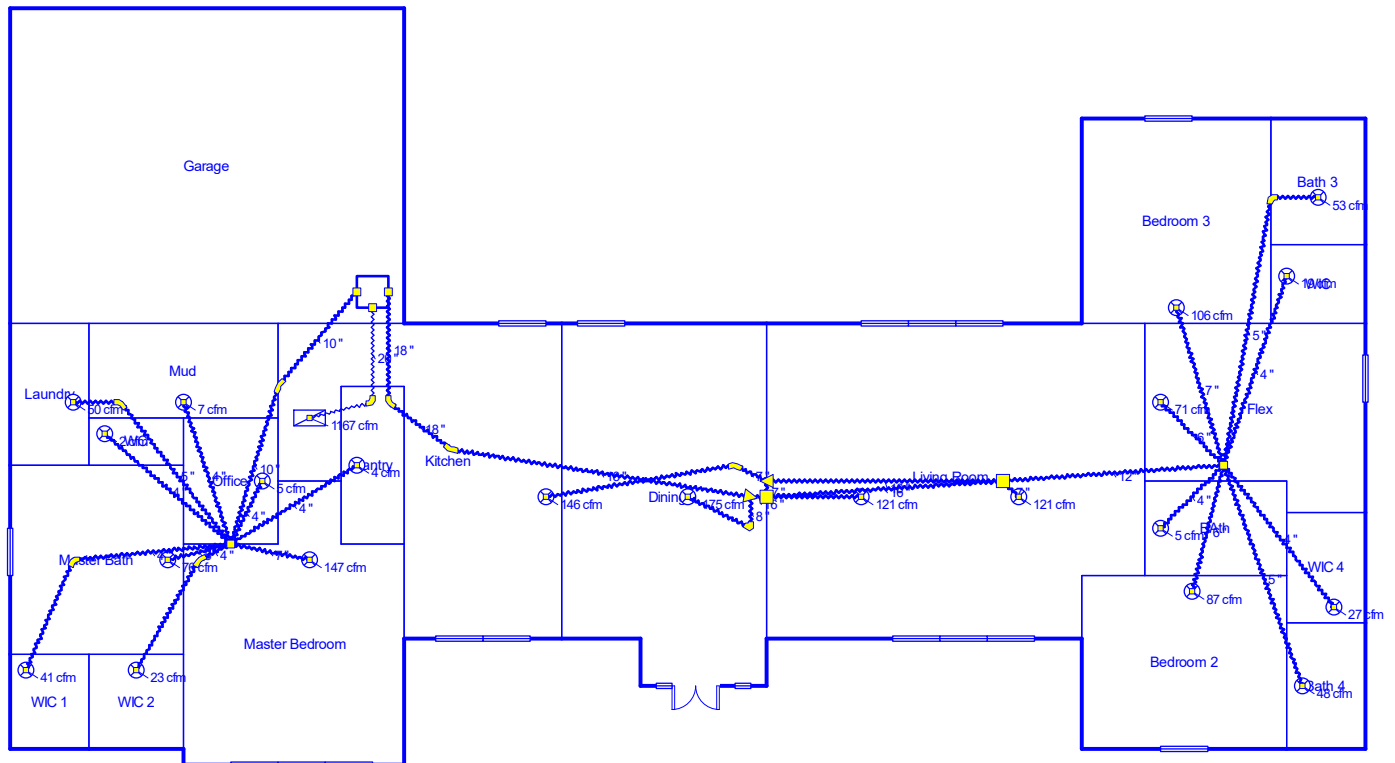
1	Room name					Flex 12.0 ft					Bath 0 ft				
2	Exposed wall					9.0 ft					9.0 ft				
3	Room height					1.0 x 150.0 ft					9.0 ft				
4	Room dimensions					150.0 ft²					54.0 ft²				
5	Room area														
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		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	12B-0sw	0.097	n	3.39	2.53	0	0	0	0	0	0	0	0	
	G	4A5-2ow	0.470	n	16.45	12.58	0	0	0	0	0	0	0	0	
	W	12B-0sw	0.097	e	3.39	2.53	108	93	316	235	0	0	0	0	
	G	4A5-2ow	0.470	e	16.45	32.31	15	0	247	485	0	0	0	0	
11	W	12B-0sw	0.097	s	3.39	2.53	0	0	0	0	0	0	0	0	
	G	10B-w	0.600	s	21.00	12.81	0	0	0	0	0	0	0	0	
	G	1D-c2ow	0.570	s	19.95	21.33	0	0	0	0	0	0	0	0	
	G	4A5-2ow	0.470	s	16.45	12.58	0	0	0	0	0	0	0	0	
	G	4A5-2ow	0.470	s	16.45	12.58	0	0	0	0	0	0	0	0	
	W	12B-0sw	0.097	w	3.39	2.53	0	0	0	0	0	0	0	0	
	G	4A5-2ow	0.470	w	16.45	32.31	0	0	0	0	0	0	0	0	
	C	16B-30ad	0.032	-	1.12	1.66	150	150	168	250	54	54	60	90	
	F	22A-tpl	0.989	-	34.62	0.00	150	12	415	0	54	0	0	0	
6	c) AED excursion									123				-2	
	Envelope loss/gain								1146	1093			60	88	
12	a) Infiltration								203	49			0	0	
	b) Room ventilation								0	0			0	0	
13	Internal gains: Occupants @ 230						0			0	0			0	0
	Appliances/other									0				0	0
	Subtotal (lines 6 to 13)								1349	1142			60	88	
	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								0	0			0	0	
14	Subtotal								1349	1142			60	88	
15	Duct loads						23%	33%	308	378		23%	33%	14	29
	Total room load								1657	1520			74	117	
	Air required (cfm)								59	71			3	5	

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Level 2



Job #:
Performed for:
Vercher
773 Indian Springs DR
Lake City, FL

Comfort Temp Company
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Level 1

Job #:
Performed for:
Vercher
773 Indian Springs DR
Lake City, FL

Comfort Temp Company
4301 NW 6th ST
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Duct System Summary

Entire House

Comfort Temp Company

Job:
Date: Mar 02, 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: Vercher, Red Door Homes
773 Indian Springs DR, Lake City, FL

	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	0.424 / 0.076 in H ₂ O	0.424 / 0.076 in H ₂ O
Lowest friction rate	0.152 in/100ft	0.152 in/100ft
Actual air flow	1167 cfm	1167 cfm
Total effective length (TEL)	329 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 117	3	5	0.179	4.0	0x0	VIFx	67.0	170.0	st7
Bath 3	h 1478	53	28	0.162	5.0	0x0	VIFx	81.6	180.0	st7
Bath 4	h 1340	48	26	0.172	5.0	0x0	VIFx	76.2	170.0	st7
Bedroom 2	h 2454	87	57	0.177	6.0	0x0	VIFx	69.6	170.0	st7
Bedroom 3	h 2976	106	66	0.175	7.0	0x0	VIFx	71.7	170.0	st7
Dining	c 3742	163	175	0.269	8.0	0x0	VIFx	37.7	120.0	st4
Flex	c 1520	59	71	0.179	6.0	0x0	VIFx	67.0	170.0	st7
Kitchen	c 3136	110	146	0.165	7.0	0x0	VIFx	76.7	180.0	st9
Laundry	c 1060	34	50	0.297	5.0	0x0	VIFx	32.7	110.0	st13
Living Room	c 2591	104	121	0.152	7.0	0x0	VIFx	69.3	210.0	st9
Living Room-A	c 2591	104	121	0.213	7.0	0x0	VIFx	48.7	150.0	st6
Master Bath	c 1635	58	76	0.346	5.0	0x0	VIFx	22.4	100.0	st13
Master Bedroom	c 3148	119	147	0.344	7.0	0x0	VIFx	23.3	100.0	st13
Mud	c 156	4	7	0.332	4.0	0x0	VIFx	27.7	100.0	st13
Office	c 104	2	5	0.345	4.0	0x0	VIFx	22.7	100.0	st13
Pantry	c 86	2	4	0.332	4.0	0x0	VIFx	27.7	100.0	st13
WC	c 39	1	2	0.329	4.0	0x0	VIFx	28.9	100.0	st13
WIC	h 545	19	11	0.174	4.0	0x0	VIFx	74.0	170.0	st7
WIC 1	h 1150	41	21	0.291	4.0	0x0	VIFx	35.9	110.0	st13
WIC 2	h 655	23	13	0.306	4.0	0x0	VIFx	28.5	110.0	st13
WIC 4	h 754	27	15	0.175	4.0	0x0	VIFx	72.7	170.0	st7



A Mittek® / Berkshire Hathaway Company

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Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st13	Peak AVF	284	325	0.291	596	10.0	0 x 0	VinIFlx	st2
st2	Peak AVF	284	325	0.291	596	10.0	0 x 0	VinIFlx	
st5	Peak AVF	719	667	0.152	515	16.0	0 x 0	VinIFlx	st4
st7	Peak AVF	401	279	0.162	511	12.0	0 x 0	VinIFlx	st6
st6	Peak AVF	719	667	0.152	515	16.0	0 x 0	VinIFlx	st5
st9	Peak AVF	214	267	0.152	490	10.0	0 x 0	VinIFlx	st6
st1	Peak AVF	883	842	0.152	500	18.0	0 x 0	VinIFlx	
st3	Peak AVF	883	842	0.152	500	18.0	0 x 0	VinIFlx	st1
st4	Peak AVF	883	842	0.152	500	18.0	0 x 0	VinIFlx	st3

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
rb2	0x 0	1167	1167	50.1	0.152	535	20.0	0x 0		VIFx	