



Manual S Compliance Report Entire House

Cook's Air Conditioning & Heating Specialists

Job: Shaheen Residence
Date: 29 June 2025
By: Joel Becker

1955 SW Main Blvd Lake City, FL 32025 Phone (866) 266-5709 Email support@cooksair.com Web cooks.ac License CAC1813212

Project Information

For Shaheen Residence
588 SW Meadow Ter, Lake City, FL 32024

Cooling Equipment

Design Conditions

Outdoor design DB	92.4 °F	Sensible gain	34579	Btuh	Entering coil DB	77.2 °F
Outdoor design WB	75.8 °F	Latent gain	5199	Btuh	Entering coil WB	63.6 °F
Indoor design DB	75.0 °F	Total gain	39778	Btuh		
Indoor RH	50%	Estimated airflow	1500	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type	Split ASHP				
Manufacturer	Rheem	Model	RP14AY48AJ2N+RH2TY4821STANN		
Actual airflow	1500	cfm			
Sensible capacity	39059	Btuh	113% of load		
Latent capacity	6451	Btuh	124% of load		
Total capacity	45510	Btuh	114% of load	SHR	86%

Heating Equipment

Design Conditions

Outdoor design DB	33.3 °F	Heat loss	38912	Btuh	Entering coil DB	68.9 °F
Indoor design DB	70.0 °F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type	Split ASHP				
Manufacturer	Rheem	Model	RP14AY48AJ2N+RH2TY4821STANN		
Actual airflow	1500	cfm			
Output capacity	45000	Btuh	116% of load	Capacity balance	30 °F
Supplemental heat required	0	Btuh		Economic balance	-99 °F

Backup equipment type	Elec strip				
Manufacturer	Rheem	Model	RXBH-1724B10J-B		
Actual airflow	1500	cfm			
Output capacity	10.0	kW	88% of load	Temp rise	21 °F

Meets all requirements of ACCA Manual S



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Load Short Form
Entire House
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Design Information

	Htg	Clg	Infiltration
Outside db (°F)	33	92	Blower door
Inside db (°F)	70	75	3 (partial) / 1
Design TD (°F)	37	17	50 Pa / 6 0 / 1978 cfm
Daily range	-	M	
Inside humidity (%)	50	50	
Moisture difference (gr/lb)	33	43	

HEATING EQUIPMENT

Make Rheem
Trade RHEEM
Model RP14AY48AJ2N
AHRI ref 214568778

Efficiency 7.5 HSPF2
Heating input
Heating output 45000 Btuh @ 47°F
Temperature rise 27 °F
Actual air flow 1500 cfm
Air flow factor 0.039 cfm/Btuh
Static pressure 0.50 in H2O
Space thermostat
Capacity balance point = 30 °F

Backup Rheem RHEEM RXBH-1724B10J-B
Input = 10 kW, Output = 34121 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Rheem
Trade RHEEM
Cond RP14AY48AJ2N
Coil RH2TY4821STANN
AHRI ref 214568778

Efficiency 9.0 EER2, 14.3 SEER2
Sensible cooling 40495 Btuh
Latent cooling 5005 Btuh
Total cooling 45500 Btuh
Actual air flow 1500 cfm
Air flow factor 0.043 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.87

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Bath	50	750	321	29	14
Bed 4	207	4101	2726	158	118
Add	287	5553	4607	214	200
Existing	1435	28507	26925	1099	1168
Entire House	1978	38912	34579	1500	1500
Other equip loads		0	0		
Equip @ 100 RSM			34579		
Latent cooling			5199		
TOTALS	1978	38912	39778	1500	1500

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





Building Analysis Entire House Cook's Air Conditioning & Heating Specialists

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Project Information

For Shaheen Residence
588 SW Meadow Ter, Lake City, FL 32024

Design Conditions

Location:

Gainesville, FL, US
Elevation 123 ft
Latitude 30°N

Outdoor:

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

Heating

33
-
-
15.0

Cooling

92
18 (M)
76
7.5

Indoor:

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

Heating

70
37
50
32.5

Cooling

75
17
50
43.5

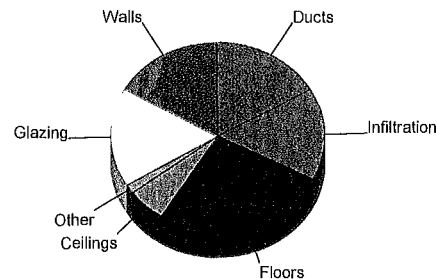
Infiltration:

Method
Shielding / stories
Pressure /ACH /AVF

Blower door
3 (partial) / 1
50 Pa / 6.0 / 1978 cfm

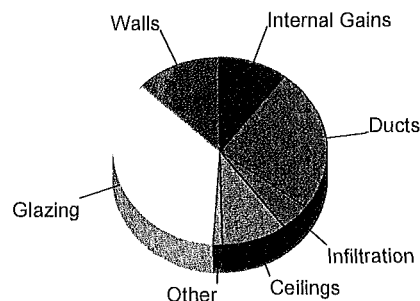
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.3	6480	16.7
Glazing	18.1	6662	17.1
Doors	14.3	601	1.5
Ceilings	1.2	2323	6.0
Floors	5.1	10177	26.2
Infiltration	2.6	6194	15.9
Ducts		6474	16.6
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	0
Total		38912	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.3	4405	12.7
Glazing	34.0	12515	36.2
Doors	11.7	491	1.4
Ceilings	1.7	3384	9.8
Floors	0	0	0
Infiltration	0.7	1638	4.7
Ducts		8596	24.9
Ventilation		0	0
Internal gains		3550	10.3
Blower		0	0
Adjustments		0	0
Total		34579	100.0



Latent Cooling Load = 5199 Btuh

Overall U-value = 0.113 Btuh/ft²-°F, Window / Floor Area = 18.6 %

Data entries checked



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Component Constructions
Entire House
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Project Information

For Shaheen Residence
588 SW Meadow Ter, Lake City, FL 32024

Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville, FL, US		Indoor temperature (°F)		70	75
Elevation 123 ft		Design TD (°F)		37	17
Latitude 30°N		Relative humidity (%)		50	50
		Moisture difference (gr/lb)		32.5	43.5
Outdoor:	Heating	Cooling	Infiltration:		
Dry bulb (°F)	33	92	Method		
Daily range (°F)	-	18 (M)	Blower door		
Wet bulb (°F)	-	76	Shielding / stories		
Wind speed (mph)	15.0	7.5	Pressure / ACH / AVF		
				3 (partial) / 1	
				50 Pa / 6.0 / 1978 cfm	

Construction descriptions

	Or	Area ft²	U-value Btu/h/ft²·°F	Insul R ft²·°F/Btu/h	Htg HTM Btu/h/ft²	Loss Btu/h	Clg HTM Btu/h/ft²	Gain Btu/h
Walls								
12C-0sw: 5m wall, stucco ext, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood fm, 16" o.c. stud	ne	423	0.091	13.0	3.34	1413	2.27	960
	se	545	0.091	13.0	3.34	1820	2.27	1237
	sw	439	0.091	13.0	3.34	1466	2.27	997
	nw	533	0.091	13.0	3.34	1781	2.27	1211
	all	1940	0.091	13.0	3.34	6480	2.27	4405

Partitions (none)

Windows

1D-c2ov: 2 glazing, clr outr, argon gas, vnl fm mat, clr innr, 1/4" gap, 1/8" thk, 5 ft overhang (1.5 ft window ht, 1 ft sep), 8.5 ft head ht	ne	9	0.570	0	20.9	188	47.6	429
1D-c2ov: 2 glazing, clr outr, argon gas, vnl fm mat, clr innr, 1/4" gap, 1/8" thk, 1.5 ft overhang (5 ft window ht, 1 ft sep), 8 ft head ht	ne	30	0.570	0	20.9	628	47.6	1429
	se	15	0.570	0	20.9	314	41.4	621
	se	20	0.570	0	20.9	418	41.4	828
	all	65	0.570	0	20.9	1360	44.3	2879
1D-c2ov: 2 glazing, clr outr, argon gas, vnl fm mat, clr innr, 1/4" gap, 1/8" thk, 5 ft overhang (5 ft window ht, 1 ft sep), 8 ft head ht	ne	20	0.570	0	20.9	418	47.6	953
1D-c2ov: 2 glazing, clr outr, argon gas, vnl fm mat, clr innr, 1/4" gap, 1/8" thk, 1.5 ft overhang (7 ft window ht, 1 ft sep), 8 ft head ht	ne	56	0.570	0	20.9	1171	47.6	2667
1D-c2ov: 2 glazing, clr outr, argon gas, vnl fm mat, clr innr, 1/4" gap, 1/8" thk, 5 ft overhang (7 ft window ht, 1 ft sep), 7 ft head ht	ne	21	0.570	0	20.9	439	47.6	1000
2 glazing, clr low-e outr, argon gas, vnl fm mat, clr innr, 1/4" gap, 1/8" thk, 2 glazing, clr low-e outr, argon gas, vnl fm mat, clr innr, 1/4" gap, 1/8" thk, NFRC rated (SHGC=0.21), 1.5 ft overhang (5 ft window ht, 1 ft sep), 8 ft head ht	se	15	0.330	0	12.1	182	17.6	263
10B-v: 2 glazing, clr outr, argon gas, vnl fm mat, clr innr, 1/4" gap, 1/8" thk, 1.5 ft overhang (8 ft window ht, 1 ft sep), 8 ft head ht	sw	48	0.600	0	22.0	1057	24.1	1159



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1D-c2ov 2 glazing, clr outr, argon gas, vnl fmm mat, clr innr, 1/4" gap, 1/8" thk; 1 5 ft overhang (4 ft window ht, 1 ft sep), 8 ft head ht	sw	12	0 570	0	20 9	251	39 4	473
2 glazing, clr low-e outr, argon gas, vnl fmm mat, clr innr, 1/4" gap, 1/8" thk.	sw	36	0 330	0	12 1	436	18 1	650
2 glazing, clr low-e outr, argon gas, vnl fmm mat, clr innr, 1/4" gap, 1/8" thk, NFRC rated (SHGC=0 21), 1 5 ft overhang (6 ft window ht, 1 ft sep), 8 ft head ht	sw	24	0 330	0	12 1	291	18 1	433
	all	60	0 330	0	12 1	727	18 1	1084
1D-c2ov 2 glazing, clr outr, argon gas, vnl fmm mat, clr innr, 1/4" gap, 1/8" thk; 8 ft head ht	nw	6	0 570	0	20 9	131	47 6	298
1D-c2ov 2 glazing, clr outr, argon gas, vnl fmm mat, clr innr, 1/4" gap, 1/8" thk, 7 ft head ht	nw	8	0 570	0	20 9	157	47 6	357
2 glazing, clr low-e outr, argon gas, vnl fmm mat, clr innr, 1/4" gap, 1/8" thk. 2 glazing, clr low-e outr, argon gas, vnl fmm mat, clr innr, 1/4" gap, 1/8" thk, NFRC rated (SHGC=0 21), 8 ft head ht	nw	48	0 330	0	12 1	581	19 9	954

Doors

11D0 Door, wd sc type	ne	21	0 390	0	14 3	301	11 7	245
	sw	21	0 390	0	14 3	301	11 7	245
	all	42	0 390	0	14 3	601	11 7	491

Ceilings

16B-30ad Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		1978	0 032	30 0	1 17	2323	1 71	3384
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Floors

22A-tpm Bg floor, heavy dry or light damp soil, on grade depth carp 80% flr fnsh		235	1 180	0	43 3	10177	0	0
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Project Summary
Entire House
Cook's Air Conditioning & Heating Specialists

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By: Joel Becker

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Project Information

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588 SW Meadow Ter, Lake City, FL 32024

Notes

Design Information

Weather: Gainesville, FL, US

Winter Design Conditions

Outside db 33 °F
Inside db 70 °F
Design TD 37 °F

Ventilation Method MJ8

Heating Summary

Structure 32438 Btuh
Ducts (R-6 0) 6474 Btuh
Central vent (0 cfm) 0 Btuh

Humidification 0 Btuh
Piping 0 Btuh
Equipment load 38912 Btuh

Infiltration

Method Blower door
Shielding / stories 3 (partial) / 1
Pressure /ACH /AVF 50 Pa / 6 0 / 1978 cfm

	Heating	Cooling
Area (ft²)	1978	1978
Volume (ft³)	19782	19782
Air changes/hour	0 47	0 26
Equiv AVF (cfm)	154	86

Heating Equipment Summary

Make Rheem
Trade RHEEM
Model RP14AY48AJ2N
AHRI ref 214568778

Efficiency 7 5 HSPF2
Heating input
Heating output 45000 Btuh @ 47°F
Temperature rise 27 °F
Actual air flow 1500 cfm
Air flow factor 0 039 cfm/Btuh
Static pressure 0 50 in H2O
Space thermostat
Capacity balance point = 30 °F

Backup Rheem RHEEM RXBH-1724B10J-B
Input = 10 kW, Output = 34121 Btuh, 100 AFUE

Summer Design Conditions

Outside db 92 °F
Inside db 75 °F
Design TD 17 °F
Daily range M
Relative humidity 50 %
Moisture difference 43 gr/lb

Sensible Cooling Equipment Load Sizing

Structure 25983 Btuh
Ducts (R-6 0) 8596 Btuh
Central vent (0 cfm) 0 Btuh

Blower 0 Btuh

Use manufacturer's data y
Rate/swing multiplier 1 00
Equipment sensible load 34579 Btuh

Latent Cooling Equipment Load Sizing

Structure 3530 Btuh
Ducts 1669 Btuh
Central vent (0 cfm) 0 Btuh

Equipment latent load 5199 Btuh

Equipment Total Load (Sen+Lat) 39778 Btuh
Req total capacity at 0 89 SHR 3 2 ton

Cooling Equipment Summary

Make Rheem
Trade RHEEM
Cond RP14AY48AJ2N
Coil RH2TY4821STANN
AHRI ref 214568778

Efficiency 9 0 EER2,14 3 SEER2
Sensible cooling 40495 Btuh
Latent cooling 5005 Btuh
Total cooling 45500 Btuh
Actual air flow 1500 cfm
Air flow factor 0 043 cfm/Btuh
Static pressure 0 50 in H2O
Load sensible heat ratio 0 87

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



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Right-J® Worksheet
Entire House
Cook's Air Conditioning & Heating
Specialists

Job: Shaheen Residence
Date: 29 June 2025
By: Joel Becker

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1	Room name					Entire House					Bath				
2	Exposed wall					235.0 ft					5.5 ft				
3	Room height					10.0 ft					10.0 ft				
4	Room dimensions					1978.2 ft²					9.0 x 5.5 ft				
5	Room area					49.5 ft²					heat/cool				
	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	ne	3.34	2.27	580	423	1413	960	0	0	0	0	
11	G	1D-c2ov	0.570	ne	20.92	47.63	9	0	188	429	0	0	0	0	
	G	1D-c2ov	0.570	ne	20.92	47.63	30	0	628	1429	0	0	0	0	
	G	1D-c2ov	0.570	ne	20.92	47.63	20	0	418	953	0	0	0	0	
	G	1D-c2ov	0.570	ne	20.92	47.63	56	0	1171	2667	0	0	0	0	
	G	1D-c2ov	0.570	ne	20.92	47.63	21	0	439	1000	0	0	0	0	
	D	11D0	0.390	ne	14.31	11.68	21	21	301	245	0	0	0	0	
	W	12C-0sw	0.091	se	3.34	2.27	595	545	1820	1237	55	55	184	125	
	G	1D-c2ov	0.570	se	20.92	41.42	15	4	314	621	0	0	0	0	
	G	1D-c2ov	0.570	se	20.92	41.42	20	6	418	828	0	0	0	0	
	G	2 glazing, dr low-e	0.330	se	12.11	17.56	15	4	182	263	0	0	0	0	
	W	12C-0sw	0.091	sw	3.34	2.27	580	439	1466	997	0	0	0	0	
G	10B-v	0.600	sw	22.02	24.14	48	9	1057	1159	0	0	0	0		
G	1D-c2ov	0.570	sw	20.92	39.41	12	4	251	473	0	0	0	0		
G	2 glazing, dr low-e	0.330	sw	12.11	18.06	36	9	436	650	0	0	0	0		
G	2 glazing, dr low-e	0.330	sw	12.11	18.06	24	6	291	433	0	0	0	0		
D	11D0	0.390	sw	14.31	11.68	21	21	301	245	0	0	0	0		
W	12C-0sw	0.091	nw	3.34	2.27	595	533	1781	1211	0	0	0	0		
G	1D-c2ov	0.570	nw	20.92	47.63	6	0	131	298	0	0	0	0		
G	1D-c2ov	0.570	nw	20.92	47.63	8	0	157	357	0	0	0	0		
G	2 glazing, dr low-e	0.330	nw	12.11	19.88	48	0	581	954	0	0	0	0		
C	16B-30ad	0.032	-	1.17	1.71	1978	1978	2323	3384	50	50	58	85		
F	22A-tpm	1.180	-	43.31	0.00	1978	235	10177	0	50	6	238	0		
6	c) AED excursion									0				-7	
	Envelope loss/gain								26244	20795			480	203	
12	a) Infiltration								6194	1638			145	38	
	b) Room ventilation								0	0			0	0	
13	Internal gains: Occupants @ 230 Appliances/other						5			1150 2400	0			0 0	
	Subtotal (lines 6 to 13)								32438	25983			625	241	
14	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								0	0			0	0	
15	Subtotal								32438	25983			625	241	
	Duct loads						20%	33%	6474	8596	20%	33%	125	80	
	Total room load								38912	34579			750	321	
	Air required (cfm)								1500	1500			29	14	

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



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1	Room name					Bed 4				Add					
2	Exposed wall					27.5 ft				34.5 ft					
3	Room height					10.0 ft				10.0 ft					
4	Room dimensions					1.0 x 206.8 ft				14.0 x 20.5 ft					
5	Room area					206.8 ft²				287.0 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	ne	3.34	2.27	0	0	0	0	0	0	0	0	
11	G	1D-c2ov	0.570	ne	20.92	47.63	0	0	0	0	0	0	0	0	
	G	1D-c2ov	0.570	ne	20.92	47.63	0	0	0	0	0	0	0	0	
	G	1D-c2ov	0.570	ne	20.92	47.63	0	0	0	0	0	0	0	0	
	G	1D-c2ov	0.570	ne	20.92	47.63	0	0	0	0	0	0	0	0	
	G	1D-c2ov	0.570	ne	20.92	47.63	0	0	0	0	0	0	0	0	
	D	11D0	0.390	ne	14.31	11.68	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	se	3.34	2.27	150	135	451	307	0	0	0	0	
	G	1D-c2ov	0.570	se	20.92	41.42	0	0	0	0	0	0	0	0	
	G	1D-c2ov	0.570	se	20.92	41.42	0	0	0	0	0	0	0	0	
	G	2 glazing, dr low-e	0.330	se	12.11	17.56	15	4	182	263	0	0	0	0	
	W	12C-0sw	0.091	sw	3.34	2.27	125	101	337	229	140	104	347	236	
G	10B-v	0.600	sw	22.02	24.14	0	0	0	0	0	0	0	0		
G	1D-c2ov	0.570	sw	20.92	39.41	0	0	0	0	0	0	0	0		
G	2 glazing, dr low-e	0.330	sw	12.11	18.06	0	0	0	0	36	9	436	650		
G	2 glazing, dr low-e	0.330	sw	12.11	18.06	24	6	291	433	0	0	0	0		
D	11D0	0.390	sw	14.31	11.68	0	0	0	0	0	0	0	0		
W	12C-0sw	0.091	nw	3.34	2.27	0	0	0	0	205	157	524	356		
G	1D-c2ov	0.570	nw	20.92	47.63	0	0	0	0	0	0	0	0		
G	1D-c2ov	0.570	nw	20.92	47.63	0	0	0	0	0	0	0	0		
G	2 glazing, dr low-e	0.330	nw	12.11	19.88	0	0	0	0	48	0	581	954		
C	16B-30ad	0.032	-	1.17	1.71	207	207	243	354	287	287	337	491		
F	22A-tpm	1.180	-	43.31	0.00	207	28	1191	0	287	34	1494	0		
6	c) AED excursion									41				533	
	Envelope loss/gain									2694	1627			3720	3221
12	a) Infiltration									725	192			909	241
	b) Room ventilation									0	0			0	0
13	Internal gains: Occupants @ 230						1			230	0		0		0
	Appliances/other									0				0	0
	Subtotal (lines 6 to 13)									3419	2049			4629	3462
14	Less external load									0	0			0	0
	Less transfer									0	0			0	0
	Redistribution									0	0			0	0
15	Subtotal									3419	2049			4629	3462
	Duct loads						20%	33%		682	678	20%	33%	924	1145
	Total room load									4101	2728			5553	4807
	Air required (cfm)									158	118			214	200

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



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Right-J® Worksheet
Entire House
Cook's Air Conditioning & Heating
Specialists

Job: Shaheen Residence
Date: 29 June 2025
By: Joel Becker

1955 SW Main Blvd Lake City, FL 32025 Phone (866) 266-5709 Email support@cooksair.com Web cooks.ac License CAC1813212

1	Room name					Existing								
2	Exposed wall					167.5 ft								
3	Room height					10.0 ft					heat/cool			
4	Room dimensions					1.0 x 1435.0 ft								
5	Room area					1435.0 ft²								
	Ty	Construction number	U-value (Btuh/ft²-F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area or perimeter		Load	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	ne	3.34	2.27	580	423	1413	960				
11	G	1D-c2ov	0.570	ne	20.92	47.63	9	0	188	429				
	G	1D-c2ov	0.570	ne	20.92	47.63	30	0	628	1429				
	G	1D-c2ov	0.570	ne	20.92	47.63	20	0	418	953				
	G	1D-c2ov	0.570	ne	20.92	47.63	56	0	1171	2667				
	G	1D-c2ov	0.570	ne	20.92	47.63	21	0	439	1000				
	D	11D0	0.390	ne	14.31	11.68	21	21	301	245				
	W	12C-0sw	0.091	se	3.34	2.27	390	355	1186	806				
	G	1D-c2ov	0.570	se	20.92	41.42	15	4	314	621				
	G	1D-c2ov	0.570	se	20.92	41.42	20	6	418	828				
	G	2 glazing, dr low-e	0.330	se	12.11	17.56	0	0	0	0				
	W	12C-0sw	0.091	sw	3.34	2.27	315	234	781	531				
G	10B-v	0.600	sw	22.02	24.14	48	9	1057	1159					
G	1D-c2ov	0.570	sw	20.92	39.41	12	4	251	473					
G	2 glazing, dr low-e	0.330	sw	12.11	18.06	0	0	0	0					
G	2 glazing, dr low-e	0.330	sw	12.11	18.06	0	0	0	0					
D	11D0	0.390	sw	14.31	11.68	21	21	301	245					
W	12C-0sw	0.091	nw	3.34	2.27	390	376	1257	854					
G	1D-c2ov	0.570	nw	20.92	47.63	6	0	131	298					
G	1D-c2ov	0.570	nw	20.92	47.63	8	0	157	357					
G	2 glazing, dr low-e	0.330	nw	12.11	19.88	0	0	0	0					
C	16B-30ad	0.032	-	1.17	1.71	1435	1435	1685	2454					
F	22A-tpm	1.180	-	43.31	0.00	1435	168	7254	0					
6	c) AED excursion									-567				
	Envelope loss/gain								19349	15744				
12	a) Infiltration								4415	1168				
	b) Room ventilation								0	0				
13	Internal gains: Occupants @ 230						4			920				
	Appliances/other									2400				
	Subtotal (lines 6 to 13)								23764	20232				
14	Less external load								0	0				
	Less transfer								0	0				
	Redistribution								0	0				
15	Subtotal								23764	20232				
	Duct loads						20%	33%	4743	6693				
	Total room load								28507	26925				
	Air required (cfm)								1099	1168				

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



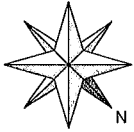
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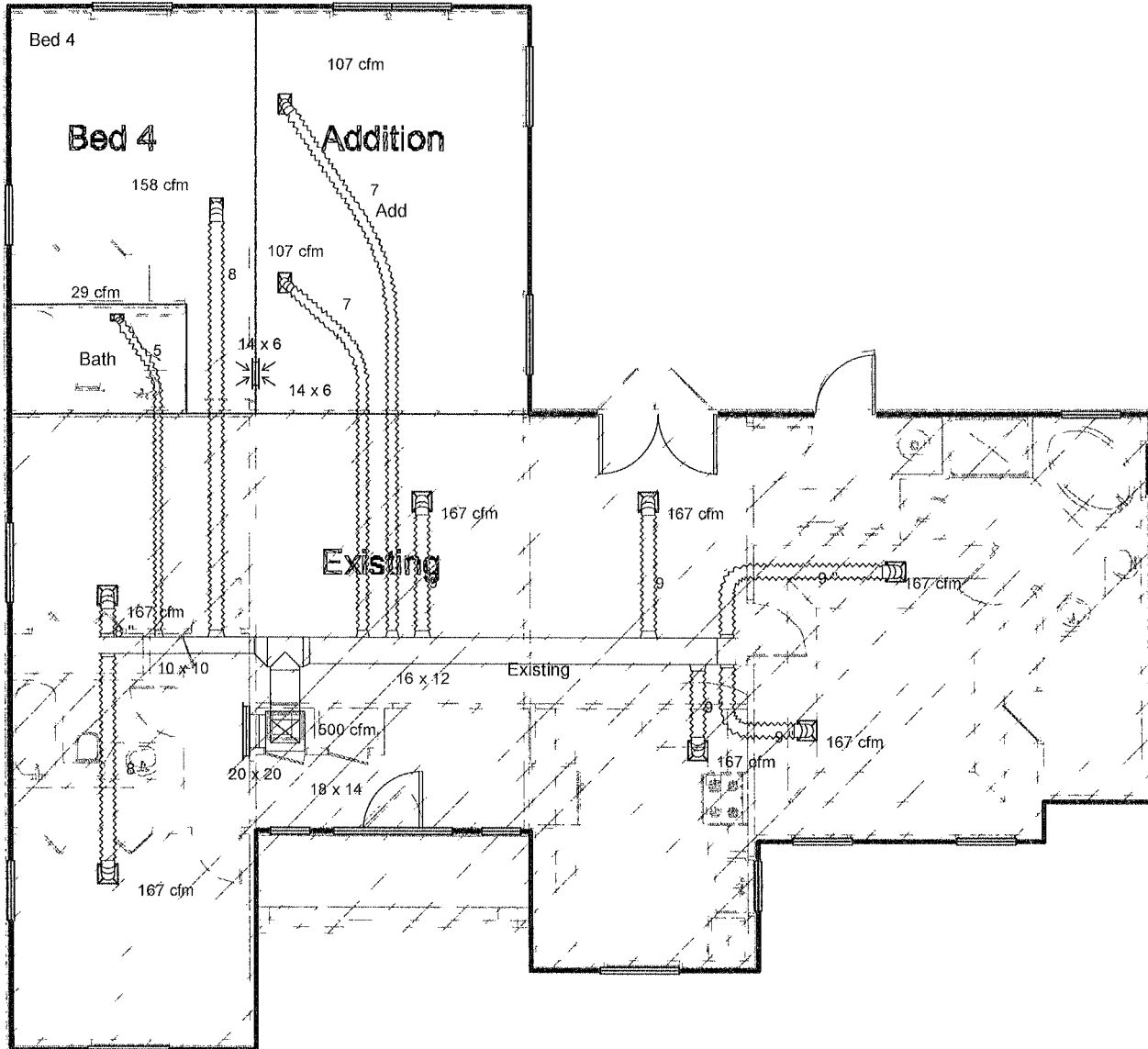
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Main Floor



Job #: Shaheen Residence
Performed by Joel Becker for:
Shaheen Residence
588 SW Meadow Ter
Lake City, FL 32024

Cook's Air Conditioning & Heating Sp...
1955 SW Main Blvd
Lake City, FL 32025
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Duct System Summary

Entire House

Cook's Air Conditioning & Heating Specialists

Job: Shaheen Residence
Date: 29 June 2025
By: Joel Becker

1955 SW Main Blvd Lake City, FL 32025 Phone (866) 266-5709 Email support@cooksair.com Web cooks.ac License CAC1813212

Project Information

For Shaheen Residence
588 SW Meadow Ter, Lake City, FL 32024

	Heating	Cooling
External static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Pressure losses	0.24 in H ₂ O	0.24 in H ₂ O
Available static pressure	0.26 in H ₂ O	0.26 in H ₂ O
Supply / return available pressure	0.215 / 0.045 in H ₂ O	0.215 / 0.045 in H ₂ O
Lowest friction rate	0.074 in/100ft	0.074 in/100ft
Actual air flow	1500 cfm	1500 cfm
Total effective length (TEL)	350 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
Add	h 2777	107	100	0.082	7.0	0x0	VIFx	28.3	235.0	st2
Add-A	h 2777	107	100	0.080	7.0	0x0	VIFx	38.7	230.0	st2
Bath	h 750	29	14	0.088	5.0	0x0	VIFx	27.6	215.0	st3
Bed 4	h 4101	158	118	0.088	8.0	0x0	VIFx	29.5	215.0	st3
Existing	c 3849	157	167	0.100	8.0	0x0	VIFx	15.5	200.0	st3
Existing-A	c 3846	157	167	0.096	8.0	0x0	VIFx	24.5	200.0	st3
Existing-B	c 3846	157	167	0.089	9.0	0x0	VIFx	30.0	210.0	st2
Existing-C	c 3846	157	167	0.090	9.0	0x0	VIFx	18.5	220.0	st2
Existing-D	c 3846	157	167	0.088	9.0	0x0	VIFx	30.0	215.0	st2
Existing-E	c 3846	157	167	0.074	9.0	0x0	VIFx	39.0	250.0	st2
Existing-F	c 3846	157	167	0.075	9.0	0x0	VIFx	34.5	250.0	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	999	1034	0.074	776	14.8	12 x 16	ShtMetl	st1
st3	Peak AVF	501	466	0.088	722	10.9	10 x 10	ShtMetl	st1
st1	Peak AVF	1500	1500	0.074	857	17.0	14 x 18	ShtMetl	



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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
rb2	0x0	1500	1500	61.0	0.074	540	17.9	20x 20		RtFg	

Bold/italic values have been manually overridden



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Duct system multi orientation report

Entire House

Cook's Air Conditioning & Heating Specialists

Job: Shaheen Residence
Date: 29 June 2025
By: Joel Becker

1955 SW Main Blvd Lake City, FL 32025 Phone (866) 266-5709 Email support@cooksair.com Web cooks.ac License CAC1813212

Project Information

For Shaheen Residence
588 SW Meadow Ter, Lake City, FL 32024

Group 1: (N, NE, SE) Group 2: (E) Group 3: (S) Group 4: (SW, W, NW)

Duct Name	(N)			(NE)			(E)			(SE)		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches												
Add	107 h	8x12	7	107 h	8x12	7	107 h	8x12	7	107 h	8x12	7
Add-A	107 h	8x12	7	107 h	8x12	7	107 h	8x12	7	107 h	8x12	7
Bath	29 h	8x4	5	29 h	8x4	5	29 h	8x4	5	29 h	8x4	5
Bed 4	158 h	12x8	8	158 h	12x8	8	158 h	12x8	8	158 h	12x8	8
Existing	165 c	12x12	8	166 c	12x12	8	169 c	12x12	8	167 c	12x12	8
Existing-A	165 c	12x12	8	166 c	12x12	8	169 c	12x12	9	167 c	12x12	8
Existing-B	165 c	12x12	9	166 c	12x12	9	169 c	12x12	9	167 c	12x12	9
Existing-C	165 c	12x12	9	166 c	12x12	9	169 c	12x12	9	167 c	12x12	9
Existing-D	165 c	12x12	9	166 c	12x12	9	169 c	12x12	9	167 c	12x12	9
Existing-E	165 c	12x12	9	166 c	12x12	9	169 c	12x12	9	167 c	12x12	9
Existing-F	165 c	12x12	9	166 c	12x12	9	169 c	12x12	9	167 c	12x12	9
Supply Trunks												
st2	1018 c		16x12	1011 c		16x12	1017 c		16x12	1034 c		16x12
st3	501 h		10x10	501 h		10x10	501 h		10x10	501 h		10x10
st1	1500 c		18x14	1500 c		18x14	1500 c		18x14	1500 c		18x14
Return Branches												
rb2	1500 c	20x30	20x20	1500 c	20x30	20x20	1500 c	20x30	20x20	1500 c	20x30	20x20
Friction Rates												
Heating FR	0.074			0.074			0.074			0.074		
Cooling FR	0.074			0.074			0.074			0.074		



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Project Information

For Shaheen Residence
588 SW Meadow Ter, Lake City, FL 32024

Duct Name	(S)			(SW)			(W)			(NW)		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches												
Add	110 c	8x12	8	107 h	8x12	7	107 h	8x12	7	107 h	8x12	7
Add-A	110 c	8x12	8	107 h	8x12	7	107 h	8x12	7	107 h	8x12	7
Bath	29 h	8x4	5	29 h	8x4	5	29 h	8x4	5	29 h	8x4	5
Bed 4	158 h	12x8	8	158 h	12x8	8	158 h	12x8	8	158 h	12x8	8
Existing	162 c	12x12	8	173 c	12x12	9	177 c	12x12	9	174 c	12x12	9
Existing-A	162 c	12x12	8	173 c	12x12	9	177 c	12x12	9	174 c	12x12	9
Existing-B	162 c	12x12	9	173 c	12x12	9	177 c	12x12	9	174 c	12x12	9
Existing-C	162 c	12x12	9	173 c	12x12	9	177 c	12x12	9	174 c	12x12	9
Existing-D	162 c	12x12	9	173 c	12x12	9	177 c	12x12	9	174 c	12x12	9
Existing-E	162 c	12x12	9	173 c	12x12	9	177 c	12x12	9	174 c	12x12	9
Existing-F	162 c	12x12	9	173 c	12x12	9	177 c	12x12	9	174 c	12x12	9
Supply Trunks												
st2	1033 c		16x12	1026 c		16x12	1028 c		16x12	1029 c		16x12
st3	501 h		10x10	501 h		10x10	501 h		10x10	501 h		10x10
st1	1500 c		18x14	1500 c		18x14	1500 c		18x14	1500 c		18x14
Return Branches												
rb2	1500 c	20x30	20x20	1500 c	20x30	20x20	1500 c	20x30	20x20	1500 c	20x30	20x20
Friction Rates												
Heating FR	0.074			0.074			0.074			0.074		
Cooling FR	0.074			0.074			0.074			0.074		



Project Information

For: Shaheen Residence
588 SW Meadow Ter, Lake City, FL 32024

Duct Name	Largest			Smallest		
	Reg CFM	Reg Size	Duct Size	Reg CFM	Reg Size	Duct Size
Supply Branches						
Add	110 c	8x12	8	107 h	8x12	7
Add-A	110 c	8x12	8	107 h	8x12	7
Bath	29 h	8x4	5	29 h	8x4	5
Bed 4	158 h	12x8	8	158 h	12x8	8
Existing	177 c	12x12	9	162 c	12x12	8
Existing-A	177 c	12x12	9	162 c	12x12	8
Existing-B	177 c	12x12	9	162 c	12x12	9
Existing-C	177 c	12x12	9	162 c	12x12	9
Existing-D	177 c	12x12	9	162 c	12x12	9
Existing-E	177 c	12x12	9	162 c	12x12	9
Existing-F	177 c	12x12	9	162 c	12x12	9
Supply Trunks						
st2	1034 c		16x12	1011 c		16x12
st3	501 h		10x10	501 h		10x10
st1	1500 c		18x14	1500 c		18x14
Return Branches						
rb2	1500 c	20x30	20x20	1500 c	20x30	20x20
Friction Rates						
Heating FR	0.074			0.074		
Cooling FR	0.074			0.074		



Background Color Legend

Yellow background

Duct Size - duct size is smaller than the largest duct size in the row

Reg Size - register size is smaller than the largest register size in the row

Reg CFM - register design cfm is larger than 150 CFM

Friction Rate - friction rate is outside ACCA Manual-D recommended range (0.06 - 0.18)

Pink background column header

Largest cooling load orientation



Static Pressure and Friction Rate
Entire House
Cook's Air Conditioning & Heating Specialists

Job: Shaheen Residence
Date: 29 June 2025
By: Joel Becker

1955 SW Main Blvd Lake City, FL 32025 Phone (866) 266-5709 Email support@cooksair.com Web cooks.ac License CAC1813212

Project Information

For Shaheen Residence
588 SW Meadow Ter, Lake City, FL 32024

Available Static Pressure

	Heating (in H2O)	Cooling (in H2O)
External static pressure	0 50	0 50
Pressure losses		
Coil	0	0
Heat exchanger	0	0
Supply diffusers	0 03	0 03
Return grilles	0 03	0 03
Filter	0 15	0 15
Humidifier	0	0
Balancing damper	0 03	0 03
Other device	0	0
Available static pressure	0 26	0 26

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	12	1
Measured length of trunk	26	0
Equivalent length of fittings	250	60
Total length	289	61
Total effective length		350

Friction Rate

	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	0 074	OK	0 074	OK
Return Ducts	0 074	OK	0 074	OK

Fitting Equivalent Length Details

Supply	4AD=60, 210=65, 11G=5, 911=85, 1A=35 TotalEL=250
Return	5D=40, 6M=20 TotalEL=60