



Load Short Form

Entire House

Sample 1

Job:
Date: Aug 04, 2026
By:

Project Information

For: Smith Residence - Sample
Phoenix, AZ

Design Information

	Htg	Clg	Infiltration	
Outside db (°F)	35	106	Method	Simplified
Inside db (°F)	70	75	Construction quality	Semi-tight
Design TD (°F)	35	31	Fireplaces	0
Daily range	-	H		
Inside humidity (%)	30	50		
Moisture difference (gr/lb)	9	1		

HEATING EQUIPMENT

Make Bryant
Trade 15 SEER2 HP
Model PH5SAN53100AA0
AHRI ref 217680139

Efficiency 7.5 HSPF2
Heating input
Heating output 28600 Btuh @ 47°F
Temperature rise 29 °F
Actual air flow 920 cfm
Air flow factor 0.041 cfm/Btuh
Static pressure 0.60 in H2O
Space thermostat
Capacity balance point = 33 °F

Backup: Carrier HK2-05B01

Input = 5 kW, Output = 17061 Btuh, 100 AFUE

COOLING EQUIPMENT

Make Bryant
Trade 15 SEER2 HP
Cond PH5SAN53100AA0
Coil CAAVU3017AMA+OVMAAB036098
AHRI ref 217680139

Efficiency 12.0 EER2, 14.5 SEER2
Sensible cooling 24288 Btuh
Latent cooling 2112 Btuh
Total cooling 26400 Btuh
Actual air flow 920 cfm
Air flow factor 0.048 cfm/Btuh
Static pressure 0.60 in H2O
Load sensible heat ratio 0.94

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Master Bedroom	195	2867	2152	116	104
WIC 1	60	1468	557	60	27
M. Toilet	24	462	566	19	27
M. Bath	137	2861	1571	116	76
Laundry	42	584	1015	24	49
Mud	84	1840	902	75	44
Pantry	30	0	0	0	0
WIC 2	28	1374	493	56	24
Bedroom 2	121	1649	1709	67	83
Bath 1	84	693	352	28	17
WIC 3	24	463	184	19	9
Bedroom 3	126	2630	1648	107	80
Stair 1	47	0	0	0	0
Great Room	570	5783	7835	235	380

Bold/italic values have been manually overridden

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



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Entire House	1572	22673	18982	920	920
Other equip loads		3049	2700		
Equip. @ 1.11 RSM			24067		
Latent cooling			1376		
TOTALS	1572	25722	25443	920	920

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Building Analysis Entire House Sample 1

Job:
Date: Aug 04, 2026
By:

Project Information

For: Smith Residence - Sample
Phoenix, AZ

Design Conditions

Location:

Phoenix Co, AZ, US
Elevation: 1083 ft
Latitude: 33°N

Outdoor:

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

Heating

35
-
-
15.0

Cooling

106
26 (H)
72
7.5

Indoor:

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

Heating

70
35
30
9.1

Cooling

75
31
50
0.8

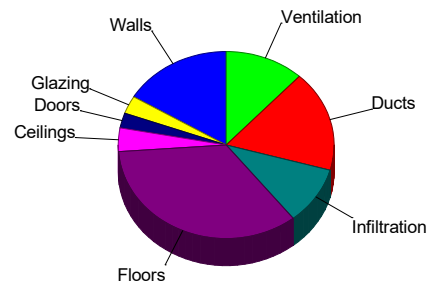
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Semi-tight
0

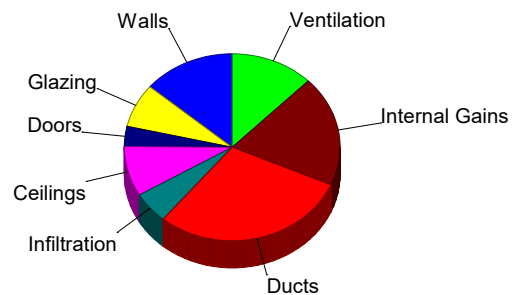
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	2.2	4213	16.4
Glazing	10.5	798	3.1
Doors	7.0	662	2.6
Ceilings	0.7	1047	4.1
Floors	5.6	8881	34.5
Infiltration	1.8	2574	10.0
Ducts		4499	17.5
Piping		0	0
Humidification		0	0
Ventilation		3049	11.9
Adjustments		0	0
Total		25722	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.5	2986	13.8
Glazing	21.8	1654	7.6
Doors	7.9	747	3.4
Ceilings	1.2	1884	8.7
Floors	0	0	0
Infiltration	0.8	1177	5.4
Ducts		6384	29.4
Ventilation		2700	12.5
Internal gains		4150	19.1
Blower		0	0
Adjustments		0	0
Total		21682	100.0



Latent Cooling Load = 1376 Btuh

Overall U-value = 0.087 Btuh/ft²-°F, Window / Floor Area = 4.8 %

WARNING: window to floor area ratio = 4.8% - less than 5%.





Component Constructions

Entire House

Sample 1

Job:
Date: Aug 04, 2026
By:

Project Information

For: Smith Residence - Sample
Phoenix, AZ

Design Conditions

Location: Phoenix Co, AZ, US Elevation: 1083 ft Latitude: 33°N		Indoor: Indoor temperature (°F) Design TD (°F) Relative humidity (%) Moisture difference (gr/lb)		Heating 70 35 30 9.1	Cooling 75 31 50 0.8
Outdoor: Dry bulb (°F) Daily range (°F) Wet bulb (°F) Wind speed (mph)	Heating 35 - - 15.0	Cooling 106 26 (H) 72 7.5	Infiltration: Method Construction quality Fireplaces	Simplified Semi-tight 0	

Construction descriptions

	Or	Area ft²	U-value Btuh/ft²·°F	Insul R ft²·°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12F-5sw: Frm wall, stucco ext, r-21 cav ins, r-5 ext bd ins, 2"x4" wood frm, 16" o.c. stud	n	414	0.050	26.0	1.52	629	1.09	449
	e	290	0.050	26.0	1.75	508	1.25	362
	s	234	0.050	26.0	1.75	409	1.25	292
	w	377	0.050	26.0	1.75	660	1.25	471
	all	1314	0.050	26.0	1.68	2205	1.20	1575
Partitions								
12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		630	0.091	13.0	3.18	2008	2.24	1411
Windows								
2 glazing, clr low-e outr, argon gas, vnl frm mat, clr innr, 1/4" gap, 1/4" thk;	n	26	0.300	0	10.5	273	14.4	375
2 glazing, clr low-e outr, argon gas, vnl frm mat, clr innr, 1/4" gap, 1/4" thk;	e	16	0.300	0	10.5	168	33.2	532
6.67 ft head ht	s	24	0.300	0	10.5	252	17.3	415
	w	10	0.300	0	10.5	105	33.2	332
	all	76	0.300	0	10.5	798	21.8	1654
Doors								
Wood Custom Insulation: Door, wd sc type	n	42	0.200	5.0	7.00	294	7.90	332
	s	35	0.200	5.0	7.00	245	7.90	276
	n	18	0.200	5.0	7.00	122	7.90	138
	all	94	0.200	5.0	7.00	662	7.90	747
Ceilings								
16B-50ad: Attic ceiling, asphalt shingles roof mat, r-50 ceil ins, 1/2" gypsum board int fnsh		1572	0.020	50.0	0.67	1047	1.20	1884
Floors								
22C-10tpm: Bg floor, heavy dry or light damp soil, prm ext ins cov, on grade depth, r-10 ins		235	1.108	10.0	37.8	8881	0	0



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Project Summary

Entire House

Sample 1

Job:
Date: Aug 04, 2026
By:

Project Information

For: Smith Residence - Sample
Phoenix, AZ

Notes:

Design Information

Weather: Phoenix Co, AZ, US

Winter Design Conditions

Outside db	35 °F
Inside db	70 °F
Design TD	35 °F

Ventilation Method ASHRAE 62.2-2019

Heating Summary

Structure	18174 Btuh
Ducts (R-8.0)	4499 Btuh
Central vent (82 cfm)	3049 Btuh
Outside air	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	25722 Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

	Heating	Cooling
Area (ft²)	1495	1495
Volume (ft³)	13457	13457
Air changes/hour	0.31	0.16
Equiv. AVF (cfm)	70	36

Heating Equipment Summary

Make	Bryant
Trade	15 SEER2 HP
Model	PH5SAN53100AA0
AHRI ref	217680139

Efficiency	7.5 HSPF2
Heating input	
Heating output	28600 Btuh @ 47°F
Temperature rise	29 °F
Actual air flow	920 cfm
Air flow factor	0.041 cfm/Btuh
Static pressure	0.60 in H2O
Space thermostat	
Capacity balance point = 33 °F	

Backup: Carrier HK2-05B01
Input = 5 kW, Output = 17061 Btuh, 100 AFUE

Summer Design Conditions

Outside db	106 °F
Inside db	75 °F
Design TD	31 °F
Daily range	H
Relative humidity	50 %
Moisture difference	1 gr/lb

Sensible Cooling Equipment Load Sizing

Structure	12598 Btuh
Ducts (R-8.0)	6384 Btuh
Central vent (82 cfm)	2700 Btuh
Outside air	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	1.11
Equipment sensible load	24067 Btuh

Latent Cooling Equipment Load Sizing

Structure	1018 Btuh
Ducts	317 Btuh
Central vent (82 cfm)	41 Btuh
Outside air	
Equipment latent load	1376 Btuh

Equipment Total Load (Sen+Lat)	25443 Btuh
Req. total capacity at 0.85 SHR	2.4 ton

Cooling Equipment Summary

Make	Bryant
Trade	15 SEER2 HP
Cond	PH5SAN53100AA0
Coil	CAAVU3017AMA+OVMAAB036098
AHRI ref	217680139

Efficiency	12.0 EER2, 14.5 SEER2
Sensible cooling	24288 Btuh
Latent cooling	2112 Btuh
Total cooling	26400 Btuh
Actual air flow	920 cfm
Air flow factor	0.048 cfm/Btuh
Static pressure	0.60 in H2O
Load sensible heat ratio	0.94

Bold/italic values have been manually overridden

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AED Assessment Entire House Sample 1

Job:
Date: Aug 04, 2026
By:

Project Information

For: Smith Residence - Sample
Phoenix, AZ

Design Conditions

Location:

Phoenix Co, AZ, US
Elevation: 1083 ft
Latitude: 33°N

Indoor:

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

Heating

70
35
30
9.1

Cooling

75
31
50
0.8

Outdoor:

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

Heating

35
-
-
15.0

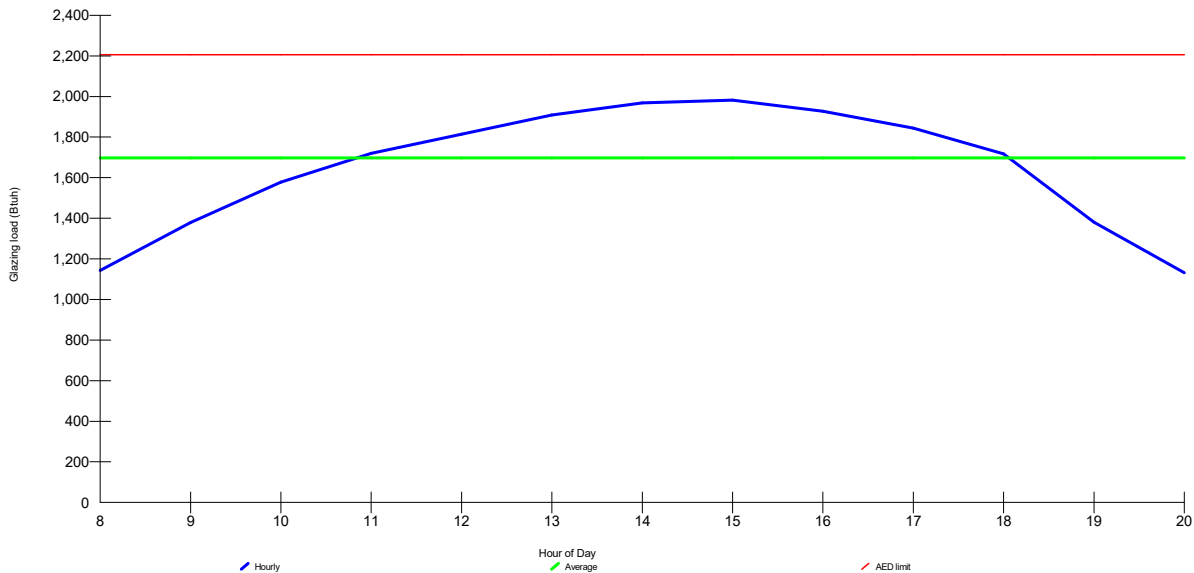
Cooling

106
26 (H)
72
7.5

Infiltration:

Test for Adequate Exposure Diversity

Hourly Glazing Load



Maximum hourly glazing load exceeds average by 16.8%.

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

Sample 1

Job:
Date: Aug 04, 2026
By:

1	Room name					Entire House				Master Bedroom				
2	Exposed wall					235.0 ft				28.5 ft				
3	Room height					9.0 ft				9.0 ft				
4	Room dimensions					1572.2 ft²				15.0 x 13.0 ft				
5	Room area					1572.2 ft²				195.0 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	12F-5sw	0.050	n	1.52	1.09	482	414	629	449	135	119	208	149
.	G	2 glazing, dr low-e	0.300	n	10.50	14.43	26	0	273	375	16	0	168	231
.	D	Wood Custom Insulati	0.200	n	7.00	7.90	42	42	294	332	0	0	0	0
11	W	12F-5sw	0.050	e	1.75	1.25	306	290	508	362	45	45	79	56
	G	2 glazing, dr low-e	0.300	e	10.50	33.23	16	0	168	532	0	0	0	0
	W	12F-5sw	0.050	s	1.75	1.25	292	234	409	292	0	0	0	0
	G	2 glazing, dr low-e	0.300	s	10.50	17.30	24	0	252	415	0	0	0	0
	D	Wood Custom Insulati	0.200	s	7.00	7.90	35	35	245	277	0	0	0	0
	W	12F-5sw	0.050	w	1.75	1.25	387	377	660	471	76	76	134	96
	G	2 glazing, dr low-e	0.300	w	10.50	33.23	10	0	105	332	0	0	0	0
	R	12C-0sw	0.091	-	3.18	2.24	648	630	2008	1411	0	0	0	0
	D	Wood Custom Insulati	0.200	n	7.00	7.90	18	18	122	138	0	0	0	0
	C	16B-50ad	0.020	-	0.67	1.20	1572	1572	1047	1884	195	195	136	246
	F	22C-10tpm	1.108	-	37.79	0.00	1572	235	8881	0	195	28	1105	0

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Right-J® Worksheet

Entire House

Sample 1

Job:
Date: Aug 04, 2026
By:

1	Room name					WIC 1					M. Toilet				
2	Exposed wall					16.0 ft					4.0 ft				
3	Room height					9.0 ft					9.0 ft				
4	Room dimensions					6.0 x 10.0 ft					6.0 x 4.0 ft				
5	Room area					60.0 ft²					24.0 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	12F-5sw	0.050	n	1.52	1.09	54	54	94	68	0	0	0	0	
11	G	2 glazing, dr low-e	0.300	n	10.50	14.43	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	n	7.00	7.90	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	e	1.75	1.25	90	90	158	112	36	28	49	35	
	G	2 glazing, dr low-e	0.300	e	10.50	33.23	0	0	0	0	8	0	84	266	
	W	12F-5sw	0.050	s	1.75	1.25	0	0	0	0	0	0	0	0	
	G	2 glazing, dr low-e	0.300	s	10.50	17.30	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	s	7.00	7.90	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	w	1.75	1.25	0	0	0	0	0	0	0	0	
	G	2 glazing, dr low-e	0.300	w	10.50	33.23	0	0	0	0	0	0	0	0	
	R	12C-0sw	0.091	-	3.18	2.24	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	n	7.00	7.90	0	0	0	0	0	0	0	0	
C	16B-50ad	0.020	-	0.67	1.20	60	60	42	76	24	24	17	30		
F	22C-10tpm	1.108	-	37.79	0.00	60	16	620	0	24	4	155	0		
												</			

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Right-J® Worksheet

Entire House

Sample 1

Job:
Date: Aug 04, 2026
By:

1	Room name					M. Bath					Laundry				
2	Exposed wall					31.0 ft					6.5 ft				
3	Room height					9.0 ft					9.0 ft				
4	Room dimensions					137.2 ft 1.0 x 137.2 ft					42.2 ft 6.5 x 6.5 ft				
5	Room area					137.2 ft²					42.2 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	12F-5sw	0.050	n	1.52	1.09	0	0	0	0	0	0	0	0	
11	G	2 glazing, dr low-e	0.300	n	10.50	14.43	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	n	7.00	7.90	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	e	1.75	1.25	94	86	151	108	0	0	0	0	
	G	2 glazing, dr low-e	0.300	e	10.50	33.23	8	0	84	266	0	0	0	0	
	W	12F-5sw	0.050	s	1.75	1.25	0	0	0	0	0	0	0	0	
	G	2 glazing, dr low-e	0.300	s	10.50	17.30	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	s	7.00	7.90	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	w	1.75	1.25	0	0	0	0	0	0	0	0	
	G	2 glazing, dr low-e	0.300	w	10.50	33.23	0	0	0	0	0	0	0	0	
	R	12C-0sw	0.091	-	3.18	2.24	184	184	588	413	58	58	186	131	
	D	Wood Custom Insulati	0.200	n	7.00	7.90	0	0	0	0	0	0	0	0	
C	16B-50ad	0.020	-	0.67	1.20	137	137	96	173	42	42	30	53		
F	22C-10tpm	1.108	-	37.79	0.00	137	31	1202	0	42	6	252	0		

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Right-J® Worksheet

Entire House

Sample 1

Job:
Date: Aug 04, 2026
By:

1	Room name					Mud 20.0 ft					Pantry 6.0 ft				
2	Exposed wall					9.0 ft					9.0 ft				
3	Room height					1.0					6.0				
4	Room dimensions					84.0 ft					30.0 ft				
5	Room area					84.0 ft²					30.0 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	12F-5sw	0.050	n	1.52	1.09	0	0	0	0	54	54	0	0	
11	G	2 glazing, dr low-e	0.300	n	10.50	14.43	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	n	7.00	7.90	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	e	1.75	1.25	0	0	0	0	0	0	0	0	
	G	2 glazing, dr low-e	0.300	e	10.50	33.23	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	s	1.75	1.25	0	0	0	0	0	0	0	0	
	G	2 glazing, dr low-e	0.300	s	10.50	17.30	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	s	7.00	7.90	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	w	1.75	1.25	0	0	0	0	0	0	0	0	
	G	2 glazing, dr low-e	0.300	w	10.50	33.23	0	0	0	0	0	0	0	0	
	R	12C-0sw	0.091	-	3.18	2.24	180	162	518	364	0	0	0	0	
	D	Wood Custom Insulati	0.200	n	7.00	7.90	18	18	122	138	0	0	0	0	
C	16B-50ad	0.020	-	0.67	1.20	84	84	59	106	30	30	0	0		
F	22C-10tpm	1.108	-	37.79	0.00	84	20	776	0	30	6	0	0		

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Right-J® Worksheet

Entire House

Sample 1

Job:
Date: Aug 04, 2026
By:

1	Room name					WIC 2					Bedroom 2				
2	Exposed wall					15.5 ft					16.5 ft				
3	Room height					heat/cool					heat/cool				
4	Room dimensions					9.0 ft 5.5 x 5.0 ft					9.0 ft 11.5 x 10.5 ft				
5	Room area					27.5 ft²					120.8 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	12F-5sw	0.050	n	1.52	1.09	50	50	87	62	0	0	0	0	
11	G	2 glazing, dr low-e	0.300	n	10.50	14.43	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	n	7.00	7.90	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	e	1.75	1.25	0	0	0	0	0	0	0	0	
	G	2 glazing, dr low-e	0.300	e	10.50	33.23	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	s	1.75	1.25	0	0	0	0	0	0	0	0	
	G	2 glazing, dr low-e	0.300	s	10.50	17.30	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	s	7.00	7.90	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	w	1.75	1.25	45	45	79	56	94	84	148	106	
	G	2 glazing, dr low-e	0.300	w	10.50	33.23	0	0	0	0	10	0	105	332	
	R	12C-0sw	0.091	-	3.18	2.24	45	45	143	101	54	54	172	121	
	D	Wood Custom Insulati	0.200	n	7.00	7.90	0	0	0	0	0	0	0	0	
C	16B-50ad	0.020	-	0.67	1.20	28	28	19	35	121	121	85	152		
F	22C-10tpm	1.108	-	37.79	0.00	28	16	601	0	121	16	640	0		
6	c) AED excursion								-5				115		
	Envelope loss/gain								929	248			1149	826	
12	a) Infiltration								172	79			172	79	
	b) Room ventilation								0	0			0	0	
13	Internal gains: Occupants @ 230 Appliances/other						0		0	0	1			230	0
	Subtotal (lines 6 to 13)								1101	327			1321	1134	
14	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								0	0			0	0	
	Subtotal								1101	327			1321	1134	
15	Duct loads						25% 51%		273	166	25% 51%		327	575	
	Total room load								1374	493			1649	1709	
	Air required (cfm)								56	24			67	83	

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



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Right-J® Worksheet

Entire House

Sample 1

Job:
Date: Aug 04, 2026
By:

1	Room name					Bath 1					WIC 3				
2	Exposed wall					7.0 ft					5.0 ft				
3	Room height					9.0 ft					9.0 ft				
4	Room dimensions					84.0 ft					24.0 ft				
5	Room area					84.0 ft²					24.0 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	12F-5sw	0.050	n	1.52	1.09	18	18	32	22	0	0	0	0	
11	G	2 glazing, dr low-e	0.300	n	10.50	14.43	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	n	7.00	7.90	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	e	1.75	1.25	0	0	0	0	0	0	0	0	
	G	2 glazing, dr low-e	0.300	e	10.50	33.23	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	s	1.75	1.25	0	0	0	0	18	18	32	22	
	G	2 glazing, dr low-e	0.300	s	10.50	17.30	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	s	7.00	7.90	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	w	1.75	1.25	45	45	79	56	27	27	47	34	
	G	2 glazing, dr low-e	0.300	w	10.50	33.23	0	0	0	0	0	0	0	0	
	R	12C-0sw	0.091	-	3.18	2.24	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	n	7.00	7.90	0	0	0	0	0	0	0	0	
C	16B-50ad	0.020	-	0.67	1.20	84	84	59	106	24	24	17	30		
F	22C-10tpm	1.108	-	37.79	0.00	84	7	271	0	24	5	194	0		

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



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Right-J® Worksheet

Entire House

Sample 1

Job:
Date: Aug 04, 2026
By:

1	Room name					Bedroom 3					Stair 1				
2	Exposed wall					27.0 ft					0 ft				
3	Room height					9.0 ft					9.0 ft				
4	Room dimensions					11.5 x 11.0 ft					1.0 x 47.0 ft				
5	Room area					126.5 ft²					47.0 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	12F-5sw	0.050	n	1.52	1.09	0	0	0	0	0	0	0	0	
11	G	2 glazing, dr low-e	0.300	n	10.50	14.43	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	n	7.00	7.90	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	e	1.75	1.25	40	40	71	51	0	0	0	0	
	G	2 glazing, dr low-e	0.300	e	10.50	33.23	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	s	1.75	1.25	104	92	160	114	0	0	0	0	
	G	2 glazing, dr low-e	0.300	s	10.50	17.30	12	0	126	208	0	0	0	0	
	D	Wood Custom Insulati	0.200	s	7.00	7.90	0	0	0	0	0	0	0	0	
	W	12F-5sw	0.050	w	1.75	1.25	99	99	173	124	0	0	0	0	
	G	2 glazing, dr low-e	0.300	w	10.50	33.23	0	0	0	0	0	0	0	0	
	R	12C-0sw	0.091	-	3.18	2.24	0	0	0	0	0	0	0	0	
	D	Wood Custom Insulati	0.200	n	7.00	7.90	0	0	0	0	0	0	0	0	
C	16B-50ad	0.020	-	0.67	1.20	126	126	89	159	47	47	0	0		
F	22C-10tpm	1.108	-	37.79	0.00	126	27	1047	0	47	0	0	0		

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



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Right-J® Worksheet

Entire House

Sample 1

Job:
Date: Aug 04, 2026
By:

1	Room name					Great Room								
2	Exposed wall					52.0 ft								
3	Room height					9.0 ft				heat/cool				
4	Room dimensions					19.0 x 30.0 ft								
5	Room area					570.0 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	12F-5sw	0.050	n	1.52	1.09	171	119	208	149				
	G	2 glazing, dr low-e	0.300	n	10.50	14.43	10	0	105	144				
	D	Wood Custom Insulati	0.200	n	7.00	7.90	42	42	294	332				
11	W	12F-5sw	0.050	e	1.75	1.25	0	0	0	0				
	G	2 glazing, dr low-e	0.300	e	10.50	33.23	0	0	0	0				
	W	12F-5sw	0.050	s	1.75	1.25	171	124	217	155				
	G	2 glazing, dr low-e	0.300	s	10.50	17.30	12	0	126	208				
	D	Wood Custom Insulati	0.200	s	7.00	7.90	35	35	245	277				
	W	12F-5sw	0.050	w	1.75	1.25	0	0	0	0				
	G	2 glazing, dr low-e	0.300	w	10.50	33.23	0	0	0	0				
	P	12C-0sw	0.091	-	3.18	2.24	126	126	401	282				
	D	Wood Custom Insulati	0.200	n	7.00	7.90	0	0	0	0				
	C	16B-50ad	0.020	-	0.67	1.20	570	570	399	718				
	F	22C-10tpm	1.108	-	37.79	0.00	570	52	2017	0				
6	c) AED excursion									-79				
	Envelope loss/gain								4012	2185				
12	a) Infiltration								623	285				
	b) Room ventilation								0	0				
13	Internal gains: Occupants @ 230 Appliances/other						1			230 2500				
	Subtotal (lines 6 to 13)								4635	5200				
	Less external load								0	0				
	Less transfer								0	0				
	Redistribution								0	0				
14	Subtotal								4635	5200				
15	Duct loads						25%	51%	1148	2635				
	Total room load								5783	7835				
	Air required (cfm)								235	380				

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



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J1 Form - Worksheet A
Entire House
Sample 1

Job:
Date: Aug 04, 2026
By:

Supporting Detail	
Project Name: HVAC Sample 1	Date: Aug 04, 2026
Address: Phoenix, AZ	
Phone:	Job ID:

Worksheet A Location and Design Conditions	
Weather Location: Phoenix Co, AZ, US	Elevation = 1083 Latitude = 33
Indoor Conditions, Heating: DB = 70 °F RH = 30 %	Indoor Conditions, Cooling: DB = 75 °F RH = 50 %
Table 1 Conditions 99% DB = 35 °F 1% DB = 106°F	Grains Difference = 1 gr/lb Daily Range = H
Design Temperature Differences	HTD = 35 °F CTD = 31 °F

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





Manual S Compliance Report

Entire House

Sample 1

Job:
Date: Aug 04, 2026
By:

Project Information

For: Smith Residence - Sample
Phoenix, AZ

Cooling Equipment

Design Conditions

Outdoor design DB:	106°F	Sensible gain:	21682	Btuh	Entering coil DB:	79.6°F
Outdoor design WB:	72.0°F	Latent gain:	1376	Btuh	Entering coil WB:	63.9°F
Indoor design DB:	75.0°F	Total gain:	23058	Btuh		
Indoor RH:	50%	Estimated airflow:	920	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Bryant	Model:	PH5SAN53100AA0+CAAVU3017AMA+OVMAAB036098	
Actual airflow:	920	cfm		
Sensible capacity:	22431	Btuh	103% of load	
Latent capacity:	1959	Btuh	142% of load	
Total capacity:	24390	Btuh	106% of load	SHR: 92%

Heating Equipment

Design Conditions

Outdoor design DB:	35.0°F	Heat loss:	25722	Btuh	Entering coil DB:	66.2°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Bryant	Model:	PH5SAN53100AA0+CAAVU3017AMA+OVMAAB036098		
Actual airflow:	920	cfm			
Output capacity:	28600	Btuh	111% of load		Capacity balance: 33 °F
Supplemental heat required:	0	Btuh			Economic balance: -99 °F

Backup equipment type:	Elec strip			
Manufacturer:	Carrier	Model:		
Actual airflow:	920	cfm		
Output capacity:	5.0	kW	66% of load	Temp. rise: 18 °F

Meets all requirements of ACCA Manual S.





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

Form
RPER 2.0

Header Information

Contractor	Sample 1	Applicable Attachments	
Mechanical license#		Manual J1 Form and Worksheet A:	☐ Yes ☐ No
Building plan #		OEM performance data (heating, cooling, blower):	☐ Yes ☐ No
Home address (Street or Lot#, Block, Subdivision)	Entire House	Duct distribution sketch:	☐ Yes ☐ No
		IRC Table R301.2 (climate & geographic design criteria)	☐ Yes ☐ No

HVAC LOAD CALCULATION

(IRC M1401.3)

Manual J Design Criteria and Loads

Location

Elevation 1083 ft
Altitude Correction Factor 0.96
Latitude 33 °N

Summer Design Conditions

Outdoor Cooling Temp 106 °F
Indoor Cooling Temp 75 °F
Cooling Temp Diff 31 °F
Indoor Summer Design RH 50 %
Coincident Wet Bulb Temp 72 °F

Manual J Loads

Total Heat Loss 25722 Btuh
Sensible Heat Gain 21682 Btuh
Latent Heat Gain 1376 Btuh
Total Heat Gain 23058 Btuh

Winter Design Conditions

Outdoor Winter Temp 35 °F
Indoor Winter Temp 70 °F
Heating Temp Diff 35 °F

The heat loss/gain was calculated in accordance with ACCA Manual J? Y ☒ N ☐

HVAC EQUIPMENT SELECTION

(IRC M1401.3)

Heating Equipment

☐ Furnace ☐ Boiler ☒ Electric Heat
☐ Single Speed ☐ Multi Stage ☐ Modulating

Model

Output 28600 Btuh Sizing Value 25722 Btuh
Supplemental 17061 Btuh Sizing Limit 175.0 %
Heat Load: Capacity 177.5 %

Size Factor is within Manual S Size Limit? Y ☐ N ☒

Cooling Equipment

☐ Air Conditioner ☒ Heat Pump
☒ Air-to-Air ☐ Geothermal Open Loop ☐ Geothermal Closed Loop
☒ Single Speed ☐ Multi Stage ☐ Variable Speed

Model PH5SAN53100AA0
CAAVU3017AMA+OVMAAB036098

Sensible 22431 Btuh Sizing Value 23058 Btuh
Latent 1959 Btuh Sizing Limit 115.0 %
Total 24390 Btuh Load: Capacity 105.8 %

Size Factor is within Manual S Size Limit? Y ☒ N ☐

HVAC DUCT DISTRIBUTION DESIGN

(IRC M1601.1)

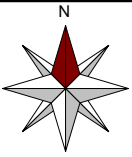
Design airflow	920 cfm	Longest Supply Duct	314 ft	Duct Materials Used
External Static Pressure (ESP)	0.60 in H2O	Longest Return Duct	91.5 ft	Trunk Duct: ☐ Duct Board ☒ Sheet Metal
Component Pressure Loss (CPL)	0.29 in H2O	Total Effective Length (TEL)	405 ft	☐ Flex ☐ Lined Sheet Metal ☐ Other
Available static pressure (ASP)	0.31 in H2O	Friction Rate	0.08 in/100ft	Branch Duct: ☐ Duct Board ☒ Sheet Metal
ESP - CPL = ASP		(ASP x 100) / TEL = Friction Rate		☒ Flex ☐ Lined Sheet Metal ☐ Other

Ducts are sized per Manual D? Y ☒ N ☐

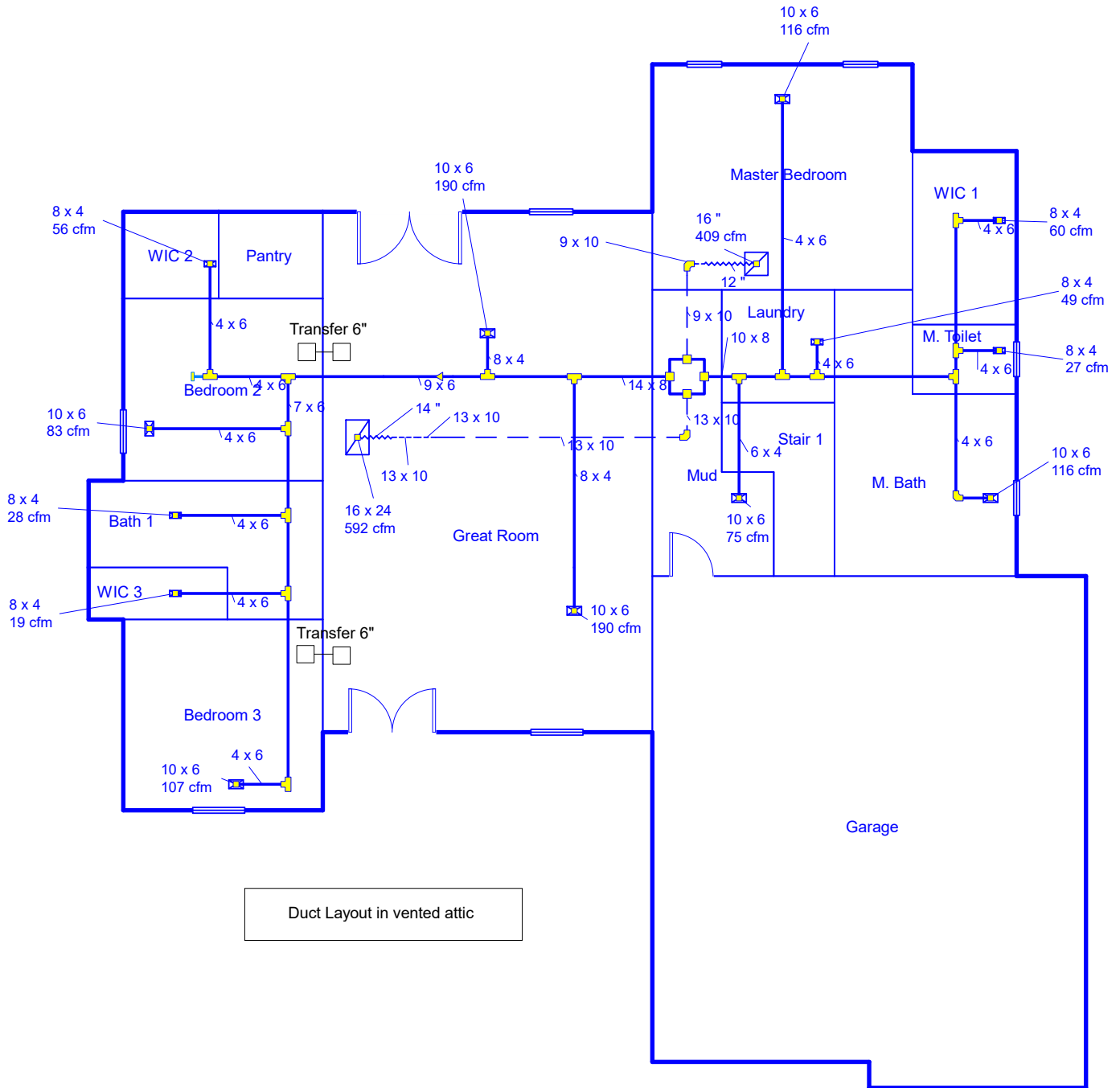
I declare the load calculation, equipment selection, and duct system design were rigorously performed based on the building plan listed above and understand the claims made on these forms may be subject to review and verification.

Contractor's printed name: _____

Contractor's signature: _____ Date: _____



First Floor



Duct Layout in vented attic

Job #:
Performed for:
Smith Residence - Sample
Phoenix, AZ

Sample 1

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Duct System Summary

Entire House

Sample 1

Job:
Date: Aug 04, 2026
By:

Project Information

For: Smith Residence - Sample
Phoenix, AZ

	Heating	Cooling
External static pressure	0.60 in H ₂ O	0.60 in H ₂ O
Pressure losses	0.29 in H ₂ O	0.29 in H ₂ O
Available static pressure	0.31 in H ₂ O	0.31 in H ₂ O
Supply / return available pressure	0.240 / 0.070 in H ₂ O	0.240 / 0.070 in H ₂ O
Lowest friction rate	0.077 in/100ft	0.077 in/100ft
Actual air flow	920 cfm	920 cfm
Total effective length (TEL)	405 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 1	h 693	28	17	0.087	3.7	6x 4	ShMt	36.5	240.0	st8
Bedroom 2	c 1709	67	83	0.086	5.6	6x 4	ShMt	33.0	245.0	st8
Bedroom 3	h 2630	107	80	0.077	6.3	6x 4	ShMt	48.5	265.0	st8
Great Room	c 3917	117	190	0.115	6.2	4x 8	ShMt	13.0	195.0	st2
Great Room-A	c 3917	117	190	0.134	6.0	4x 8	ShMt	19.0	160.0	st2
Laundry	c 1015	24	49	0.156	4.1	6x 4	ShMt	8.5	145.0	st1
M. Bath	h 2861	116	76	0.138	5.8	6x 4	ShMt	23.5	150.0	st1
M. Toilet	c 566	19	27	0.134	3.4	6x 4	ShMt	18.5	160.0	st1
Master Bedroom	h 2867	116	104	0.137	5.8	6x 4	ShMt	20.5	155.0	st1
Mud	h 1840	75	44	0.142	5.1	4x 6	ShMt	9.0	160.0	st1
WIC 1	h 1468	60	27	0.116	4.7	6x 4	ShMt	26.0	180.0	st1
WIC 2	h 1374	56	24	0.095	4.7	6x 4	ShMt	33.0	220.0	st7
WIC 3	h 463	19	9	0.084	3.2	6x 4	ShMt	41.0	245.0	st8

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st1	Peak AVF	409	328	0.116	736	9.6	8 x 10	ShtMetl	st2A st2 st2A
st7	Peak AVF	56	24	0.095	334	4.7	6 x 4	ShtMetl	
st2A	Peak AVF	276	213	0.077	737	9.0	6 x 9	ShtMetl	
st8	Peak AVF	221	189	0.077	756	8.3	6 x 7	ShtMetl	
st2	Peak AVF	511	592	0.077	762	12.2	8 x 14	ShtMetl	

Bold/italic values have been manually overridden



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	409	328	89.5	0.078	521	12.0	0x 0		VIFx	rt3
rb2	0x 0	511	592	91.5	0.077	554	14.0	0x 0		VIFx	rt6

Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rt1	Peak AVF	409	328	0.078	655	10.4	10 x 9	ShtMetl	
rt3	Peak AVF	409	328	0.078	655	10.4	10 x 9	ShtMetl	rt1
rt6	Peak AVF	511	592	0.077	656	11.9	10 x 13	ShtMetl	rt5
rt5	Peak AVF	511	592	0.077	656	11.9	10 x 13	ShtMetl	rt4
rt2	Peak AVF	511	592	0.077	656	11.9	10 x 13	ShtMetl	
rt4	Peak AVF	511	592	0.077	656	11.9	10 x 13	ShtMetl	rt2



Static Pressure and Friction Rate

Entire House

Sample 1

Job:
Date: Aug 04, 2026
By:

Project Information

For: Smith Residence - Sample
Phoenix, AZ

Available Static Pressure

	Heating (in H ₂ O)	Cooling (in H ₂ O)
External static pressure	0.60	0.60
Pressure losses		
Coil	0.10	0.10
Heat exchanger	0	0
Supply diffusers	0.03	0.03
Return grilles	0.03	0.03
Filter	0.10	0.10
Humidifier	0	0
Balancing damper	0.03	0.03
Other device	0	0
Available static pressure	0.31	0.31

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	3	2
Measured length of trunk	46	20
Equivalent length of fittings	265	70
Total length	314	92
Total effective length		405

Friction Rate

	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	0.077	OK	0.077	OK
Return Ducts	0.077	OK	0.077	OK

Fitting Equivalent Length Details

Supply	4AD=60, 8B3=20, 9K=65, 12F1=20, 9K=65, 1A=35: TotalEL=265
Return	6M=20, 8AE=10, 5D=40: TotalEL=70