



Load Short Form

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

Project Information

For: Johnson Residence
Minneapolis, MN

Design Information

	Htg	Clg	Infiltration	Simplified
Outside db (°F)	-6	88	Method	Tight
Inside db (°F)	70	75	Construction quality	0
Design TD (°F)	76	13	Fireplaces	
Daily range	-	M		
Inside humidity (%)	30	50		
Moisture difference (gr/lb)	30	30		

HEATING EQUIPMENT

Make	Carrier
Trade	Carrier Comfort 80 Single-Stage
Model	58SC1A090E17-14
AHRI ref	0
Efficiency	80 AFUE
Heating input	66000 Btuh
Heating output	53000 Btuh
Temperature rise	71 °F
Actual air flow	700 cfm
Air flow factor	0.016 cfm/Btuh
Static pressure	0.70 in H2O
Space thermostat	

COOLING EQUIPMENT

Make	Carrier
Trade	PERFORMANCE 16 SEER2 AC
Cond	26SPA624W00300
Coil	CVAMA2417XMAA+59SC2E040M14-12
AHRI ref	214938977
Efficiency	12.0 EER2, 15.2 SEER2
Sensible cooling	15680 Btuh
Latent cooling	6720 Btuh
Total cooling	22400 Btuh
Actual air flow	700 cfm
Air flow factor	0.051 cfm/Btuh
Static pressure	0.70 in H2O
Load sensible heat ratio	0.81

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Pantry	35	311	40	5	2
Bath 1	38	342	44	6	2
Drop	46	637	121	10	6
Dine, Kit, Living	537	5167	5154	84	263
Stair 1	53	0	0	0	0
Stair B	30	0	0	0	0
WIC 2	26	185	38	3	2
WIC 3	26	365	62	6	3
Bed 3	137	1052	625	17	32
Bath M	76	965	640	16	33
WIC M	64	406	88	7	4
Bath 3	68	433	94	7	5
Bath 2	47	451	93	7	5
Towel	9	0	0	0	0

Bold/italic values have been manually overridden

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



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2026-Aug-19 18:54:06

Page 1

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Bed 2	146	1539	1287	25	66
Room34	243	2566	1221	42	62
Master Bed	215	1759	1717	29	88
Stair 2	53	0	0	0	0
Family Room	330	3707	2019	60	103
Stair B1	35	0	0	0	0
Basement	1023	23119	452	376	23
Entire House	3238	43005	13693	700	700
Other equip loads		8839	1500		
Equip. @ 0.93 RSM			14115		
Latent cooling			3677		
TOTALS	3238	51844	17792	700	700

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Building Analysis Entire House Sample 2

Job: J081326
Date: Aug 13, 2026
By:

Project Information

For: Johnson Residence
Minneapolis, MN

Design Conditions

Location:

Minneapolis-St Paul, MN, US
Elevation: 872 ft
Latitude: 45°N

Outdoor:

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

Heating

-6
-
-
15.0

Cooling

88
17 (M)
72
7.5

Indoor:

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

Heating

70
76
30
30.4

Cooling

75
13
50
29.5

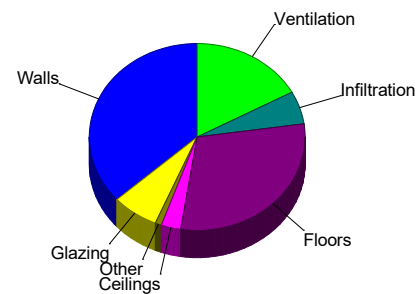
Infiltration:

Method
Construction quality
Fireplaces

Simplified
Tight
0

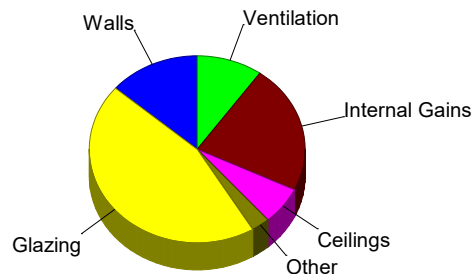
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.5	18995	36.6
Glazing	15.2	3638	7.0
Doors	12.9	497	1.0
Ceilings	1.4	1523	2.9
Floors	14.1	15405	29.7
Infiltration	1.1	2946	5.7
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		8839	17.0
Adjustments		0	
Total		51844	100.0



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	0.5	2076	13.7
Glazing	28.5	6828	44.9
Doors	4.4	168	1.1
Ceilings	0.9	986	6.5
Floors	0.0	6	0.0
Infiltration	0.1	250	1.6
Ducts		0	0
Ventilation		1500	9.9
Internal gains		3380	22.2
Blower		0	0
Adjustments		0	
Total		15194	100.0



Latent Cooling Load = 3677 Btuh

Overall U-value = 0.080 Btuh/ft²-°F, Window / Floor Area = 7.4 %

Data entries checked.





Component Constructions

Entire House

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Project Information

For: Johnson Residence
Minneapolis, MN

Design Conditions

Location:		Indoor:		Heating	Cooling
Minneapolis-St Paul, MN, US		Indoor temperature (°F)		70	75
Elevation: 872 ft		Design TD (°F)		76	13
Latitude: 45°N		Relative humidity (%)		30	50
		Moisture difference (gr/lb)		30.4	29.5
Outdoor:	Heating	Cooling			
Dry bulb (°F)	-6	88			
Daily range (°F)	-	17 (M)			
Wet bulb (°F)	-	72			
Wind speed (mph)	15.0	7.5			
		Infiltration:			
		Method	Simplified		
		Construction quality	Tight		
		Fireplaces	0		

Construction descriptions

	Or	Area ft ²	U-value Btuh/ft ² ·°F	Insul R ft ² ·°F/Btuh	Htg HTM Btuh/ft ²	Loss Btuh	Clg HTM Btuh/ft ²	Gain Btuh
Walls								
12F-6sw: Frm wall, stucco ext, r-21 cav ins, r-10 ext bd ins, 2"x4" wood frm, 16" o.c. stud	n	737	0.048	27.0	3.65	2689	0.51	375
	e	306	0.048	27.0	3.65	1118	0.51	156
	s	818	0.048	27.0	3.37	2754	0.47	384
	w	335	0.048	27.0	3.65	1223	0.51	171
	all	2197	0.048	27.0	3.54	7784	0.49	1086
15A-15s3oc-6: Bg wall, heavy damp soil, empty core, concrete block wall, r-15 ins, 8" thk	n	428	0.063	15.0	4.72	2020	0.18	76
	e	202	0.063	15.0	4.72	957	0.18	36
	s	387	0.063	15.0	4.72	1828	0.18	68
	w	202	0.063	15.0	4.72	957	0.18	36
	all	1220	0.063	15.0	4.72	5762	0.18	215
Partitions								
12C-0sw: Frm wall, stucco ext, r-13 cav ins, 2"x4" wood frm, 16" o.c. stud		788	0.091	13.0	6.92	5450	0.98	774
Windows								
2 glazing, clr outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/4" thk: 2 glazing, clr outr, air gas, wd frm mat, clr innr, 1/4" gap, 1/4" thk; 6.67 ft head ht	n	10	0.200	0	15.2	152	9.18	92
	e	78	0.200	0	15.2	1181	35.2	2736
	s	82	0.200	0	15.2	1246	18.9	1546
	w	46	0.200	0	15.2	699	35.2	1620
	w	24	0.200	0	15.2	360	35.2	834
	all	239	0.200	0	15.2	3638	28.5	6828
Doors								
Door, wd sc type	e	21	0.170	0	12.9	271	4.37	92
	n	18	0.170	0	12.9	226	4.37	76
	all	38	0.170	0	12.9	497	4.37	168
Ceilings								
16B-56ad: Attic ceiling, asphalt shingles roof mat, r-20 roof ins, r-56 ceil ins		1122	0.018	56.0	1.36	1523	0.88	986

Floors

19C-19cscp: Flr floor, frm flr, 6" thkns, carpet flr fnsh, r-2 ext ins, r-19 cav ins, tight cowl ovr, r-11 wall insul	5	0.049	30.0	1.29	6	0.22	1
	21	0.049	30.0	1.29	27	0.22	5
	all 26	0.049	30.0	1.29	34	0.22	6
22C-10tph: Bg floor, heavy damp soil, prm ext ins cov, on grade depth, r-10 ins	168	1.221	10.0	90.3	15219	0	0
	2	1.221	10.0	92.8	153	0	0
	all 170	1.221	10.0	90.3	15371	0	0



Project Summary

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Minneapolis, MN

Notes:

Design Information

Weather: Minneapolis-St Paul, MN, US

Winter Design Conditions

Outside db	-6 °F
Inside db	70 °F
Design TD	76 °F

Ventilation Method MJ8

Heating Summary

Structure	43005 Btuh
Ducts	0 Btuh
Central vent (109 cfm)	8839 Btuh
Outside air	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	51844 Btuh

Infiltration

Method	Simplified
Construction quality	Tight
Fireplaces	0

	Heating	Cooling
Area (ft²)	3164	3164
Volume (ft³)	21826	21826
Air changes/hour	0.10	0.05
Equiv. AVF (cfm)	36	18

Heating Equipment Summary

Make	Carrier
Trade	Carrier Comfort 80 Single-Stag...
Model	58SC1A090E17--14
AHRI ref	0

Efficiency	80 AFUE
Heating input	66000 Btuh
Heating output	53000 Btuh
Temperature rise	71 °F
Actual air flow	700 cfm
Air flow factor	0.016 cfm/Btuh
Static pressure	0.70 in H2O
Space thermostat	

Summer Design Conditions

Outside db	88 °F
Inside db	75 °F
Design TD	13 °F
Daily range	M
Relative humidity	50 %
Moisture difference	30 gr/lb

Sensible Cooling Equipment Load Sizing

Structure	13693 Btuh
Ducts	0 Btuh
Central vent (109 cfm)	1500 Btuh
Outside air	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.93
Equipment sensible load	14115 Btuh

Latent Cooling Equipment Load Sizing

Structure	1554 Btuh
Ducts	0 Btuh
Central vent (109 cfm)	2123 Btuh
Outside air	
Equipment latent load	3677 Btuh

Equipment Total Load (Sen+Lat)	17792 Btuh
Req. total capacity at 0.80 SHR	1.5 ton

Cooling Equipment Summary

Make	Carrier
Trade	PERFORMANCE 16 SEER2 AC
Cond	26SPA624W00300
Coil	CVAMA2417XMAA+59SC2E040M14--12
AHRI ref	214938977
Efficiency	12.0 EER2, 15.2 SEER2
Sensible cooling	15680 Btuh
Latent cooling	6720 Btuh
Total cooling	22400 Btuh
Actual air flow	700 cfm
Air flow factor	0.051 cfm/Btuh
Static pressure	0.70 in H2O
Load sensible heat ratio	0.81

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2026-Aug-19 18:54:06
Page 1



AED Assessment Entire House Sample 2

Job: J081326
Date: Aug 13, 2026
By:

Project Information

For: Johnson Residence
Minneapolis, MN

Design Conditions

Location:

Minneapolis-St Paul, MN, US
Elevation: 872 ft
Latitude: 45°N

Indoor:

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

Heating

70
76
30
30.4

Cooling

75
13
50
29.5

Outdoor:

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

Heating

-6
-
-
15.0

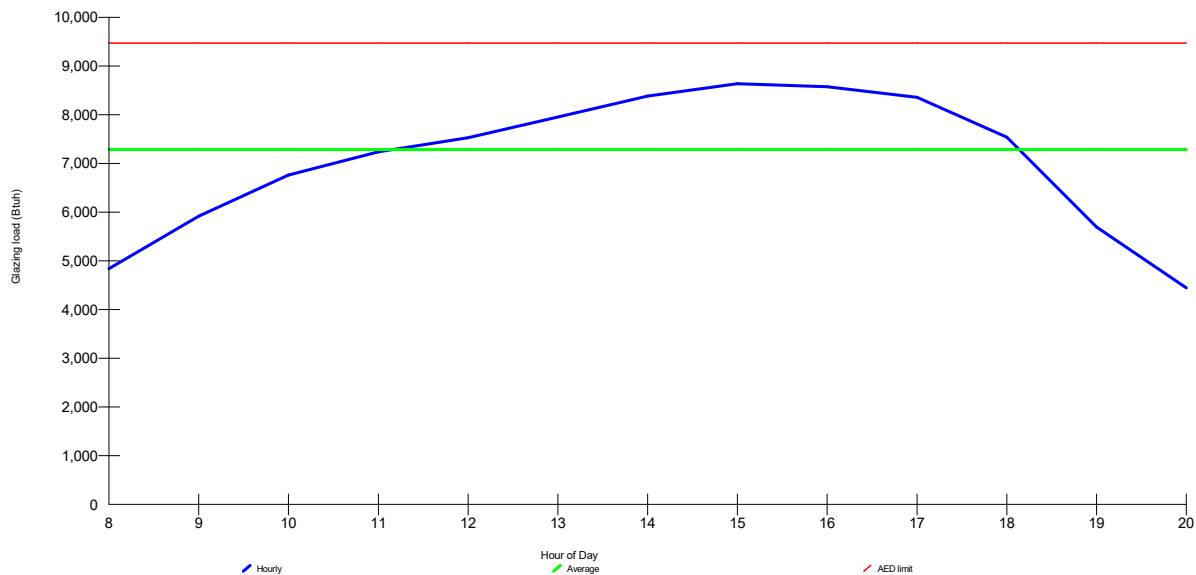
Cooling

88
17 (M)
72
7.5

Infiltration:

Test for Adequate Exposure Diversity

Hourly Glazing Load



Maximum hourly glazing load exceeds average by 18.6%.

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

AED excursion: 0 Btuh





Right-J® Worksheet

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

1	Room name					Entire House				Pantry				
2	Exposed wall					497.9 ft				5.0 ft				
3	Room height					9.0 ft				9.0 ft				
4	Room dimensions					3237.5 ft²				7.0 x 5.0 ft				
5	Room area					3237.5 ft²				35.0 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-6sw	0.048	n	3.65	0.51	747	737	2689	375	0	0	0	0
	G	2 glazing, dr outr,	0.200	n	15.20	9.18	10	0	152	92	0	0	0	0
	W	15A-15s3oc-6	0.063	n	4.72	0.18	428	428	2020	76	0	0	0	0
	W	12F-6sw	0.048	e	3.65	0.51	405	306	1118	156	0	0	0	0
11	G	2 glazing, dr outr,	0.200	e	15.20	35.23	78	0	1181	2736	0	0	0	0
	D	Door, wd sc type	0.170	e	12.92	4.37	21	21	271	92	0	0	0	0
	W	15A-15s3oc-6	0.063	e	4.72	0.18	202	202	957	36	0	0	0	0
	W	12F-6sw	0.048	s	3.37	0.47	900	818	2754	384	0	0	0	0
	G	2 glazing, dr outr,	0.200	s	15.20	18.85	82	0	1246	1546	0	0	0	0
	W	15A-15s3oc-6	0.063	s	4.72	0.18	387	387	1828	68	0	0	0	0
	W	12F-6sw	0.048	w	3.65	0.51	405	335	1223	171	0	0	0	0
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	46	0	699	1620	0	0	0	0
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	24	0	360	834	0	0	0	0
	W	15A-15s3oc-6	0.063	w	4.72	0.18	202	202	957	36	0	0	0	0
	P	12C-0sw	0.091	-	6.92	0.98	806	788	5450	774	45	45	311	44
	D	Door, wd sc type	0.170	n	12.92	4.37	18	18	226	76	0	0	0	0
	C	16B-56ad	0.018	-	1.36	0.88	1122	1122	1523	986	0	0	0	0
	F	19C-19cscp	0.049	-	1.29	0.22	5	5	6	1	0	0	0	0
	F	19C-19cscp	0.049	-	1.29	0.22	21	21	27	5	0	0	0	0
	F	22C-10tph	1.221	-	90.32	0.00	1058	168	15219	0	0	0	0	0
	F	22C-10tph	1.221	-	92.80	0.00	11	2	153	0	0	0	0	0
6	c) AED excursion									0				-4
	Envelope loss/gain								40058	10063			311	40
12	a) Infiltration								2946	250			0	0
	b) Room ventilation								0	0			0	0
13	Internal gains: Occupants @ 230 Appliances/other						6			1380 2000	0			0 0
	Subtotal (lines 6 to 13)								43005	13693			311	40
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								43005	13693			311	40
15	Duct loads						0%	0%	0	0	-0%	0%	0	0
	Total room load								43005	13693			311	40
	Air required (cfm)								700	700			5	2

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



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2026-Aug-19 18:54:06

Page 1



Right-J® Worksheet

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

1	Room name					Bath 1					Drop				
2	Exposed wall					5.5 ft					6.5 ft				
3	Room height					heat/cool					heat/cool				
4	Room dimensions					9.0 ft 7.0 x 5.5 ft					9.0 ft 7.0 x 6.5 ft				
5	Room area					38.5 ft²					45.5 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-6sw	0.048	n	3.65	0.51	0	0	0	0	0	0	0	0	
11	G	2 glazing, dr outr,	0.200	n	15.20	9.18	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	n	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	e	3.65	0.51	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	e	15.20	35.23	0	0	0	0	0	0	0	0	
	D	Door, wd sc type	0.170	e	12.92	4.37	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	e	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	s	3.37	0.47	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	s	15.20	18.85	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	s	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	w	3.65	0.51	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	w	4.72	0.18	0	0	0	0	0	0	0	0	
	P	12C-0sw	0.091	-	6.92	0.98	50	50	342	49	58	41	284	40	
	D	Door, wd sc type	0.170	n	12.92	4.37	0	0	0	0	18	18	226	76	
	C	16B-56ad	0.018	-	1.36	0.88	0	0	0	0	0	0	0	0	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
	F	22C-10tph	1.221	-	90.32	0.00	0	0	0	0	0	0	0	0	
F	22C-10tph	1.221	-	92.80	0.00	0	0	0	0	0	0	0	0		
									</						

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2026-Aug-19 18:54:06

Page 2



Right-J® Worksheet

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

1	Room name					Dine, Kit, Living					Stair 1				
2	Exposed wall					78.5 ft					10.0 ft				
3	Room height					9.0 ft					9.0 ft				
4	Room dimensions					1.0 x 537.2 ft					1.0 x 53.0 ft				
5	Room area					537.2 ft²					53.0 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-6sw	0.048	n	3.65	0.51	94	94	345	48	68	68	246	34	
11	G	2 glazing, dr outr,	0.200	n	15.20	9.18	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	n	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	e	3.65	0.51	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	e	15.20	35.23	0	0	0	0	0	0	0	0	
	D	Door, wd sc type	0.170	e	12.92	4.37	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	e	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	s	3.37	0.47	252	180	657	92	0	0	0	0	
	G	2 glazing, dr outr,	0.200	s	15.20	18.85	72	0	1094	1357	0	0	0	0	
	W	15A-15s3oc-6	0.063	s	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	w	3.65	0.51	202	163	594	83	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	16	0	243	564	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	24	0	360	834	0	0	0	0	
	W	15A-15s3oc-6	0.063	w	4.72	0.18	0	0	0	0	0	0	0	0	
	P	12C-0sw	0.091	-	6.92	0.98	158	158	1089	155	22	22	156	22	
	D	Door, wd sc type	0.170	n	12.92	4.37	0	0	0	0	0	0	0	0	
	C	16B-56ad	0.018	-	1.36	0.88	11	11	15	10	0	0	0	0	
	F	19C-19cscp	0.049	-	1.29	0.22	5	5	6	1	0	0	0	0	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
F	22C-10tph	1.221	-	90.32	0.00	0	0	0	0	0	0	0	0		
F	22C-10tph	1.221	-	92.80	0.00	11	2	153	0	0	0	0	0		
6	c) AED excursion								-271				-6		
	Envelope loss/gain								4556	2872			402	51	
12	a) Infiltration								592	50			73	6	
	b) Room ventilation								0	0			0	0	
13	Internal gains: Occupants @ 230 Appliances/other						1			230 2000	0			0 0	
	Subtotal (lines 6 to 13)								5148	5152			475	57	
14	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								18	2			-475	-57	
	Subtotal								5167	5154			0	0	
15	Duct loads						-0%	0%	0	0	-0%	0%	0	0	
	Total room load								5167	5154			0	0	
	Air required (cfm)								84	263			0	0	

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



Right-Suite® Universal 2025 25.0.05 RSU40232
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2026-Aug-19 18:54:06
Page 3



Right-J® Worksheet

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

1	Room name					Stair B					WIC 2				
2	Exposed wall					2.5 ft					3.5 ft				
3	Room height					uncondit.					heat/cool				
4	Room dimensions					9.0 ft 12.0 x 2.5 ft					9.0 ft 7.5 x 3.5 ft				
5	Room area					30.0 ft²					26.2 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-6sw	0.048	n	3.65	0.51	0	0	0	0	0	0	0	0	
.	G	2 glazing, dr outr,	0.200	n	15.20	9.18	0	0	0	0	0	0	0	0	
.	W	15A-15s3oc-6	0.063	n	4.72	0.18	0	0	0	0	0	0	0	0	
.	W	12F-6sw	0.048	e	3.65	0.51	0	0	0	0	0	0	0	0	
11	G	2 glazing, dr outr,	0.200	e	15.20	35.23	0	0	0	0	0	0	0	0	
	D	Door, wd sc type	0.170	e	12.92	4.37	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	e	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	s	3.37	0.47	22	22	0	0	32	32	115	16	
	G	2 glazing, dr outr,	0.200	s	15.20	18.85	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	s	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	w	3.65	0.51	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	w	4.72	0.18	0	0	0	0	0	0	0	0	
	P	12C-0sw	0.091	-	6.92	0.98	0	0	0	0	0	0	0	0	
D	Door, wd sc type	0.170	n	12.92	4.37	0	0	0	0	0	0	0	0		
C	16B-56ad	0.018	-	1.36	0.88	0	0	0	0	26	26	36	23		
F	19C-19csqp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0		
F	19C-19csqp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0		
F	22C-10tph	1.221	-	90.32	0.00	0	0	0	0	0	0	0	0		
F	22C-10tph	1.221	-	92.80	0.00	0	0	0	0	0	0	0	0		
								</							

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



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2026-Aug-19 18:54:06

Page 4



Right-J® Worksheet

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

1	Room name					WIC 3					Bed 3				
2	Exposed wall					6.0 ft					16.0 ft				
3	Room height					9.0 ft					9.0 ft				
4	Room dimensions					7.5 x 3.5 ft					1.0 x 137.0 ft				
5	Room area					26.2 ft²					137.0 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-6sw	0.048	n	3.65	0.51	0	0	0	0	0	0	0	0	
11	G	2 glazing, dr outr,	0.200	n	15.20	9.18	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	n	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	e	3.65	0.51	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	e	15.20	35.23	0	0	0	0	0	0	0	0	
	D	Door, wd sc type	0.170	e	12.92	4.37	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	e	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	s	3.37	0.47	32	32	115	16	112	102	374	52	
	G	2 glazing, dr outr,	0.200	s	15.20	18.85	0	0	0	0	10	0	152	189	
	W	15A-15s3oc-6	0.063	s	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	w	3.65	0.51	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	w	4.72	0.18	0	0	0	0	0	0	0	0	
	P	12C-0sw	0.091	-	6.92	0.98	22	22	156	22	32	32	218	31	
	D	Door, wd sc type	0.170	n	12.92	4.37	0	0	0	0	0	0	0	0	
	C	16B-56ad	0.018	-	1.36	0.88	26	26	36	23	137	137	187	121	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
F	19C-19cscp	0.049	-	1.29	0.22	19	19	24	4	0	0	0	0		
F	22C-10tph	1.221	-	90.32	0.00	0	0	0	0	0	0	0	0		
F	22C-10tph	1.221	-	92.80	0.00	0	0	0	0	0	0	0	0		
</															

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



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2026-Aug-19 18:54:06
Page 5



Right-J® Worksheet

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

1	Room name					Bath M					WIC M				
2	Exposed wall					17.5 ft					7.5 ft				
3	Room height					9.0 ft					9.0 ft				
4	Room dimensions					8.5 x 9.0 ft					8.5 x 7.5 ft				
5	Room area					76.5 ft²					63.8 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-6sw	0.048	n	3.65	0.51	81	81	295	41	68	68	246	34	
11	G	2 glazing, dr outr,	0.200	n	15.20	9.18	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	n	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	e	3.65	0.51	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	e	15.20	35.23	0	0	0	0	0	0	0	0	
	D	Door, wd sc type	0.170	e	12.92	4.37	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	e	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	s	3.37	0.47	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	s	15.20	18.85	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	s	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	w	3.65	0.51	76	66	243	34	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	10	0	152	352	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	w	4.72	0.18	0	0	0	0	0	0	0	0	
	P	12C-0sw	0.091	-	6.92	0.98	0	0	0	0	0	0	0	0	
	D	Door, wd sc type	0.170	n	12.92	4.37	0	0	0	0	0	0	0	0	
	C	16B-56ad	0.018	-	1.36	0.88	76	76	105	68	64	64	87	56	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
	F	22C-10tph	1.221	-	90.32	0.00	0	0	0	0	0	0	0	0	
	F	22C-10tph	1.221	-	92.80	0.00	0	0	0	0	0	0	0	0	

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2026-Aug-19 18:54:06

Page 6



Right-J® Worksheet

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

1	Room name					Bath 3					Bath 2				
2	Exposed wall					8.0 ft					5.5 ft				
3	Room height					9.0 ft					9.0 ft				
4	Room dimensions					8.5 x 8.0 ft					8.5 x 5.5 ft				
5	Room area					68.0 ft²					46.8 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-6sw	0.048	n	3.65	0.51	72	72	263	37	50	50	181	25	
11	G	2 glazing, dr outr,	0.200	n	15.20	9.18	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	n	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	e	3.65	0.51	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	e	15.20	35.23	0	0	0	0	0	0	0	0	
	D	Door, wd sc type	0.170	e	12.92	4.37	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	e	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	s	3.37	0.47	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	s	15.20	18.85	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	s	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	w	3.65	0.51	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	w	4.72	0.18	0	0	0	0	0	0	0	0	
	P	12C-0sw	0.091	-	6.92	0.98	0	0	0	0	0	0	0	0	
	D	Door, wd sc type	0.170	n	12.92	4.37	0	0	0	0	0	0	0	0	
	C	16B-56ad	0.018	-	1.36	0.88	68	68	93	60	47	47	64	41	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0		
F	22C-10tph	1.221	-	90.32	0.00	0	0	0	0	0	0	0	0		
F	22C-10tph	1.221	-	92.80	0.00	0	0	0	0	0	0	0	0		

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



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2026-Aug-19 18:54:06

Page 7



Right-J® Worksheet

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

1	Room name					Towel 0 ft					Bed 2 25.5 ft				
2	Exposed wall					9.0 ft					9.0 ft				
3	Room height					uncondit.					heat/cool				
4	Room dimensions					8.8 ft² 3.5 x 2.5 ft					146.4 ft² 1.0 x 146.4 ft				
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	12F-6sw	0.048	n	3.65	0.51	0	0	0	0	9	9	33	5	
	G	2 glazing, dr outr,	0.200	n	15.20	9.18	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	n	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	e	3.65	0.51	0	0	0	0	104	82	297	41	
11	G	2 glazing, dr outr,	0.200	e	15.20	35.23	0	0	0	0	22	0	334	775	
	D	Door, wd sc type	0.170	e	12.92	4.37	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	e	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	s	3.37	0.47	0	0	0	0	117	117	427	60	
	G	2 glazing, dr outr,	0.200	s	15.20	18.85	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	s	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	w	3.65	0.51	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	w	4.72	0.18	0	0	0	0	0	0	0	0	
	P	12C-0sw	0.091	-	6.92	0.98	0	0	0	0	0	0	0	0	
	D	Door, wd sc type	0.170	n	12.92	4.37	0	0	0	0	0	0	0	0	
	C	16B-56ad	0.018	-	1.36	0.88	9	9	0	0	146	146	200	130	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
	F	22C-10tph	1.221	-	90.32	0.00	0	0	0	0	0	0	0	0	
	F	22C-10tph	1.221	-	92.80	0.00	0	0	0	0	0	0	0	0	
6	c) AED excursion									0				26	
	Envelope loss/gain									0	0			1292	1036
12	a)	Infiltration								0	0			247	21
	b)	Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			0				0	1			230
			Appliances/other								0				0
	Subtotal (lines 6 to 13)									0	0			1539	1287
	Less external load									0	0			0	0
	Less transfer									0	0			0	0
	Redistribution									0	0			0	0
14	Subtotal									0	0			1539	1287
15	Duct loads						0%	0%		0	0	-0%	0%	0	0
	Total room load									0	0			1539	1287
	Air required (cfm)									0	0			25	66

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



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2026-Aug-19 18:54:06

Page 8



Right-J® Worksheet

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

1	Room name					Room34					Master Bed				
2	Exposed wall					33.4 ft					29.0 ft				
3	Room height					9.0 ft					9.0 ft				
4	Room dimensions					1.0 x 243.1 ft					1.0 x 215.0 ft				
5	Room area					243.1 ft²					215.0 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-6sw	0.048	n	3.65	0.51	148	138	505	70	0	0	0	0	
11	G	2 glazing, dr outr, 15A-15s3oc-6	0.200	n	15.20	9.18	10	0	152	92	0	0	0	0	
	W	15A-15s3oc-6	0.063	n	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	e	3.65	0.51	99	79	289	40	0	0	0	0	
	G	2 glazing, dr outr, 12F-6sw	0.200	e	15.20	35.23	20	0	299	693	0	0	0	0	
	D	Door, wd sc type	0.170	e	12.92	4.37	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	e	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	s	3.37	0.47	0	0	0	0	135	135	492	69	
	G	2 glazing, dr outr, 12F-6sw	0.200	s	15.20	18.85	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	s	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	w	3.65	0.51	0	0	0	0	126	106	387	54	
	G	2 glazing, dr outr, 12F-6sw	0.200	w	15.20	35.23	0	0	0	0	20	0	304	705	
	G	2 glazing, dr outr, 12F-6sw	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	w	4.72	0.18	0	0	0	0	0	0	0	0	
	P	12C-0sw	0.091	-	6.92	0.98	54	54	373	53	0	0	0	0	
	D	Door, wd sc type	0.170	n	12.92	4.37	0	0	0	0	0	0	0	0	
	C	16B-56ad	0.018	-	1.36	0.88	243	243	333	215	215	215	294	190	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
	F	19C-19cscp	0.049	-	1.29	0.22	2	2	3	1	0	0	0	0	
	F	22C-10tph	1.221	-	90.32	0.00	0	0	0	0	0	0	0	0	
F	22C-10tph	1.221	-	92.80	0.00	0	0	0	0	0	0	0	0		
6	c) AED excursion								-30				215		
	Envelope loss/gain								1955	1135			1477	1233	
12	a) Infiltration								267	23			281	24	
	b) Room ventilation								0	0			0	0	
13	Internal gains: Occupants @ 230 Appliances/other						0			0	2			460	0
	Subtotal (lines 6 to 13)								2222	1157			1759	1717	
14	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								345	63			0	0	
	Subtotal								2566	1221			1759	1717	
15	Duct loads						-0%	0%	0	0	-0%	0%	0	0	
	Total room load								2566	1221			1759	1717	
	Air required (cfm)								42	62			29	88	

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



Right-Suite® Universal 2025 25.0.05 RSU40232
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2026-Aug-19 18:54:06
Page 9



Right-J® Worksheet

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

1	Room name					Stair 2					Family Room				
2	Exposed wall					10.0 ft					59.5 ft				
3	Room height					9.0 ft					9.0 ft				
4	Room dimensions					1.0 x 53.0 ft					1.0 x 329.8 ft				
5	Room area					53.0 ft²					329.8 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-6sw	0.048	n	3.65	0.51	90	90	328	46	68	68	246	34	
11	G	2 glazing, dr outr,	0.200	n	15.20	9.18	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	n	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	e	3.65	0.51	0	0	0	0	202	146	531	74	
	G	2 glazing, dr outr,	0.200	e	15.20	35.23	0	0	0	0	36	0	547	1268	
	D	Door, wd sc type	0.170	e	12.92	4.37	0	0	0	0	21	21	271	92	
	W	15A-15s3oc-6	0.063	e	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	s	3.37	0.47	0	0	0	0	158	158	575	80	
	G	2 glazing, dr outr,	0.200	s	15.20	18.85	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	s	4.72	0.18	0	0	0	0	0	0	0	0	
	W	12F-6sw	0.048	w	3.65	0.51	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr,	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	w	4.72	0.18	0	0	0	0	0	0	0	0	
	P	12C-0sw	0.091	-	6.92	0.98	0	0	0	0	108	108	747	106	
	D	Door, wd sc type	0.170	n	12.92	4.37	0	0	0	0	0	0	0	0	
	C	16B-56ad	0.018	-	1.36	0.88	53	53	73	47	0	0	0	0	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
	F	22C-10tph	1.221	-	90.32	0.00	0	0	0	0	0	0	0	0	
	F	22C-10tph	1.221	-	92.80	0.00	0	0	0	0	0	0	0	0	

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



Right-Suite® Universal 2025 25.0.05 RSU40232
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2026-Aug-19 18:54:06
Page 10



Right-J® Worksheet

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

1	Room name					Stair B1					Basement				
2	Exposed wall					4.5 ft					164.0 ft				
3	Room height					uncondit.					heat/cool				
4	Room dimensions					9.0 ft 1.0 x 35.0 ft					9.0 ft 1.0 x 1022.8 ft				
5	Room area					35.0 ft²					1022.8 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-6sw	0.048	n	3.65	0.51	0	0	0	0	0	0	0	0	
11	G	2 glazing, dr outr, 15A-15s3oc-6	0.200	n	15.20	9.18	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	n	4.72	0.18	0	0	0	0	428	428	2020	76	
	W	12F-6sw	0.048	e	3.65	0.51	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr, 12F-6sw	0.200	e	15.20	35.23	0	0	0	0	0	0	0	0	
	D	Door, wd sc type	0.170	e	12.92	4.37	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	e	4.72	0.18	0	0	0	0	202	202	957	36	
	W	12F-6sw	0.048	s	3.37	0.47	40	40	0	0	0	0	0	0	
	G	2 glazing, dr outr, 15A-15s3oc-6	0.200	s	15.20	18.85	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	s	4.72	0.18	0	0	0	0	387	387	1828	68	
	W	12F-6sw	0.048	w	3.65	0.51	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr, 12F-6sw	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	G	2 glazing, dr outr, 15A-15s3oc-6	0.200	w	15.20	35.23	0	0	0	0	0	0	0	0	
	W	15A-15s3oc-6	0.063	w	4.72	0.18	0	0	0	0	202	202	957	36	
	P	12C-0sw	0.091	-	6.92	0.98	0	0	0	0	256	256	1774	252	
	D	Door, wd sc type	0.170	n	12.92	4.37	0	0	0	0	0	0	0	0	
	C	16B-56ad	0.018	-	1.36	0.88	0	0	0	0	0	0	0	0	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
	F	19C-19cscp	0.049	-	1.29	0.22	0	0	0	0	0	0	0	0	
	F	22C-10tph	1.221	-	90.32	0.00	35	4	0	0	1023	164	15219	0	
F	22C-10tph	1.221	-	92.80	0.00	0	0	0	0	0	0	0	0		
														</	

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



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2026-Aug-19 18:54:06

Page 11



J1 Form - Worksheet A
Entire House
Sample 2

Job: J081326
Date: Aug 13, 2026
By:

Supporting Detail	
Project Name: HVAC Sample 2	Date: Aug 13, 2026
Address: Minneapolis, MN	
Phone:	Job ID: J081326

Worksheet A Location and Design Conditions	
Weather Location: Minneapolis-St Paul, MN, US	Elevation = 872 Latitude = 45
Indoor Conditions, Heating: DB = 70 °F RH = 30 %	Indoor Conditions, Cooling: DB = 75 °F RH = 50 %
Table 1 Conditions 99% DB = -6 °F 1% DB = 88 °F	Grains Difference = 30 gr/lb Daily Range = M
Design Temperature Differences	HTD = 76 °F CTD = 13 °F

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



Manual S Compliance Report

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

Project Information

For: Johnson Residence
Minneapolis, MN

Cooling Equipment

Design Conditions

Outdoor design DB:	87.9°F	Sensible gain:	15194	Btuh	Entering coil DB:	77.1°F
Outdoor design WB:	72.0°F	Latent gain:	3677	Btuh	Entering coil WB:	64.1°F
Indoor design DB:	75.0°F	Total gain:	18871	Btuh		
Indoor RH:	50%	Estimated airflow:	700	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split AC			
Manufacturer:	Carrier	Model:	26SPA624W00300+CVAMA2417XMAA+59SC2E040M14--12	
Actual airflow:	700	cfm		
Sensible capacity:	16431	Btuh	108% of load	
Latent capacity:	5216	Btuh	142% of load	
Total capacity:	21647	Btuh	115% of load	SHR: 76%

Heating Equipment

Design Conditions

Outdoor design DB:	-6.0°F	Heat loss:	51844	Btuh	Entering coil DB:	57.9°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Gas furnace			
Manufacturer:	Carrier	Model:	58SC1A090E17--14	
Actual airflow:	700	cfm		
Output capacity:	53000	Btuh	102% of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



Right-Suite® Universal 2025 25.0.05 RSU40232

2026-Aug-19 18:54:09

Page 1

E:\Downloads\HVAC Sample 2.rup Calc = MJ8 Front Door faces: E



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

Form
RPER 2.0

Header Information

Contractor	Sample 2	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 872 ft
Altitude Correction Factor 0.97
Latitude 45 °N

Summer Design Conditions

Outdoor Cooling Temp 88 °F
Indoor Cooling Temp 75 °F
Cooling Temp Diff 13 °F
Indoor Summer Design RH 50 %
Coincident Wet Bulb Temp 72 °F

Manual J Loads

Total Heat Loss 51844 Btuh
Sensible Heat Gain 15194 Btuh
Latent Heat Gain 3677 Btuh
Total Heat Gain 18871 Btuh

Winter Design Conditions

Outdoor Winter Temp -6 °F
Indoor Winter Temp 70 °F
Heating Temp Diff 76 °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 58SC1A090E17--14

Output 53000 Btuh Sizing Value 51844 Btuh
Supplemental Heat 0 Btuh Sizing Limit 200.0 %
Load: Capacity 102.2 %

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 26SPA624W00300
CVAMA2417XMAA+59SC2E040M14-12

Sensible 16431 Btuh Sizing Value 18871 Btuh
Latent 5216 Btuh Sizing Limit 115.0 %
Total 21647 Btuh Load: Capacity 114.7 %

Size Factor is within Manual S Size Limit?

Y ☒ N ☐

HVAC DUCT DISTRIBUTION DESIGN

(IRC M1601.1)

Design airflow	700 cfm	Longest Supply Duct	375 ft	Duct Materials Used	
External Static Pressure (ESP)	0.70 in H2O	Longest Return Duct	302 ft	Trunk Duct:	☐ Duct Board ☒ Sheet Metal
Component Pressure Loss (CPL)	0.26 in H2O	Total Effective Length (TEL)	676 ft		☐ Flex ☐ Lined Sheet Metal ☐ Other
Available static pressure (ASP)	0.44 in H2O	Friction Rate	0.07 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?

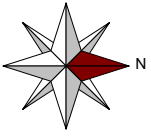
Y ☒ N ☐

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.

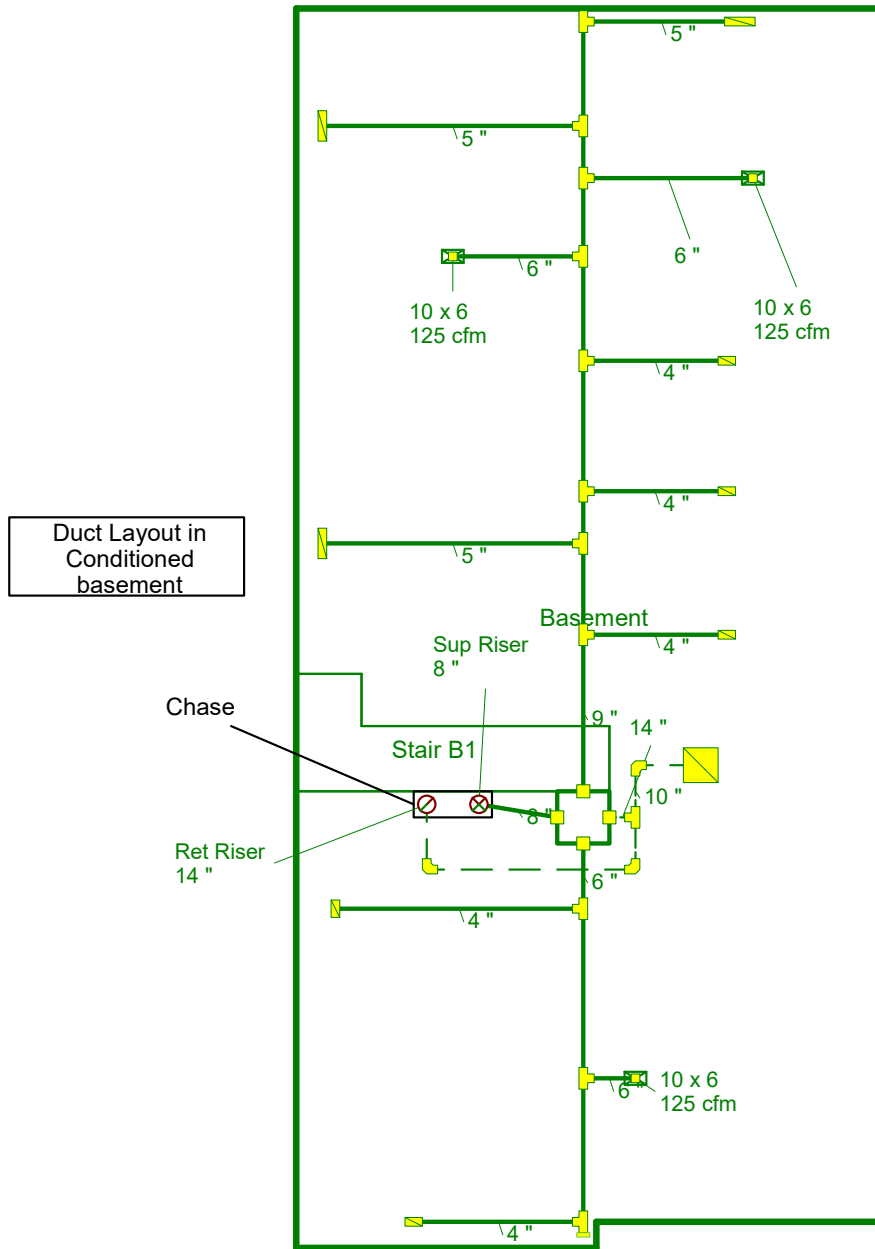
Contractor's printed name:

Contractor's signature:

Date:



Basement



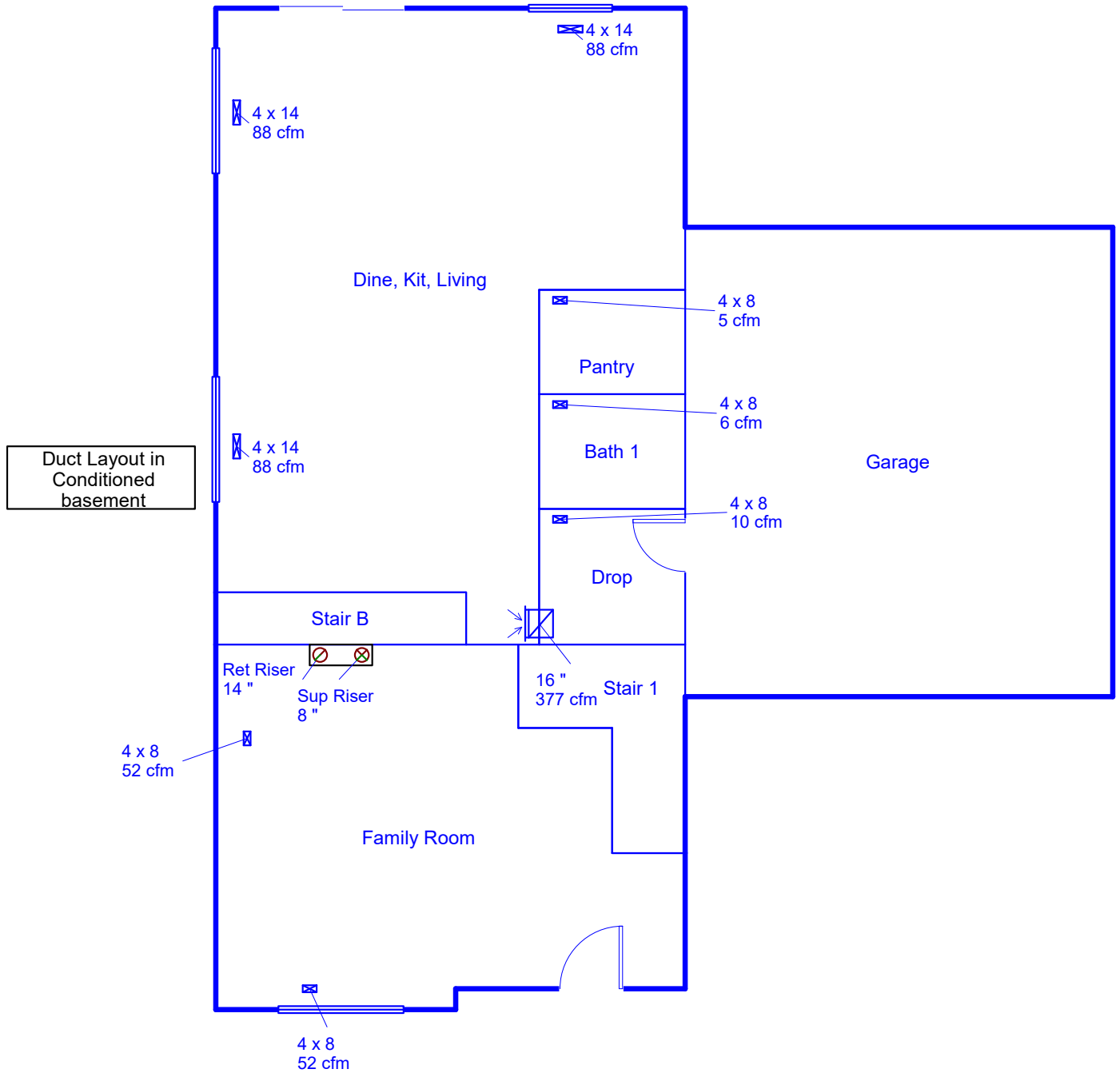
Job #: J081326
Performed for:
Johnson Residence
Minneapolis, MN

Sample 2

Scale: 1 : 88
Page 1
Right-Suite® Universal 2025
25.0.05 RSU40232
2026-Aug-19 18:54:34
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Floor 1



Job #: J081326
Performed for:
Johnson Residence
Minneapolis, MN

Sample 2

Scale: 1 : 88
Page 2
Right-Suite® Universal 2025
25.0.05 RSU40232
2026-Aug-19 18:54:34
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Duct System Summary

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

Project Information

For: Johnson Residence
Minneapolis, MN

	Heating	Cooling
External static pressure	0.70 in H ₂ O	0.70 in H ₂ O
Pressure losses	0.26 in H ₂ O	0.26 in H ₂ O
Available static pressure	0.44 in H ₂ O	0.44 in H ₂ O
Supply / return available pressure	0.244 / 0.196 in H ₂ O	0.244 / 0.196 in H ₂ O
Lowest friction rate	0.065 in/100ft	0.065 in/100ft
Actual air flow	700 cfm	700 cfm
Total effective length (TEL)	676 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
Basement	h 7707	125	8	0.116	6.0	0x0	ShMt	25.5	185.0	st1
Basement-A	h 7706	125	8	0.128	6.0	0x0	ShMt	30.0	160.0	st1
Basement-B	h 7706	125	8	0.161	6.0	0x0	ShMt	11.0	140.0	st2
Bath 1	h 342	6	2	0.124	4.0	0x0	ShMt	17.0	180.0	st1
Bath 2	h 451	7	5	0.082	4.0	0x0	ShMt	38.5	260.0	st5
Bath 3	h 433	7	5	0.084	4.0	0x0	ShMt	46.5	245.0	st5
Bath M	c 640	16	33	0.070	4.0	0x0	ShMt	61.5	285.0	st5
Bed 2	c 1287	25	66	0.092	4.0	0x0	ShMt	39.0	225.0	st4
Bed 3	c 625	17	32	0.085	4.0	0x0	ShMt	32.0	255.0	st5
Dine, Kit, Living	c 1718	28	88	0.122	5.0	0x0	ShMt	19.5	180.0	st1
Dine, Kit, Living-A	c 1718	28	88	0.131	5.0	0x0	ShMt	35.5	150.0	st1
Dine, Kit, Living-B	c 1718	28	88	0.162	5.0	0x0	ShMt	35.5	115.0	st1
Drop	h 637	10	6	0.131	4.0	0x0	ShMt	11.5	175.0	st1
Family Room	c 1009	30	52	0.150	4.0	0x0	ShMt	12.0	150.0	st2
Family Room-A	c 1009	30	52	0.161	4.0	0x0	ShMt	21.0	130.0	st2
Master Bed	c 858	14	44	0.072	4.0	0x0	ShMt	54.5	285.0	st5
Master Bed-A	c 858	14	44	0.065	4.0	0x0	ShMt	54.5	320.0	st5
Pantry	h 311	5	2	0.127	4.0	0x0	ShMt	22.0	170.0	st1
Room34	c 1221	42	62	0.088	4.0	0x0	ShMt	41.0	235.0	st4
WIC 2	h 185	3	2	0.089	4.0	0x0	ShMt	29.0	245.0	st4
WIC 3	h 365	6	3	0.082	4.0	0x0	ShMt	27.5	270.0	st5
WIC M	h 406	7	4	0.084	4.0	0x0	ShMt	54.0	235.0	st5

Bold/italic values have been manually overridden



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	186	111	0.150	946	6.0	0 x 0	ShtMetl	st3
st1	Peak AVF	356	289	0.116	806	9.0	0 x 0	ShtMetl	
st4	Peak AVF	70	130	0.088	954	5.0	0 x 0	ShtMetl	
st5	Peak AVF	88	170	0.065	864	6.0	0 x 0	ShtMetl	
st3	Peak AVF	158	300	0.065	859	8.0	0 x 0	ShtMetl	

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
rb4	0x 0	165	377	159.5	0.123	692	10.0	0x 0		ShMt	rt1
rb1	0x 0	333	182	301.5	0.065	611	10.0	0x 0		ShMt	rt5
rb2	0x 0	201	141	287.5	0.068	576	8.0	0x 0		ShMt	rt4

Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rt4	Peak AVF	201	141	0.068	576	8.0	0 x 0	ShtMetl	rt1
rt1	Peak AVF	700	700	0.065	655	14.0	0 x 0	ShtMetl	rt1
rt5	Peak AVF	333	182	0.065	611	10.0	0 x 0	ShtMetl	





Static Pressure and Friction Rate

Entire House

Sample 2

Job: J081326
Date: Aug 13, 2026
By:

Project Information

For: Johnson Residence
Minneapolis, MN

Available Static Pressure

	Heating (in H ₂ O)	Cooling (in H ₂ O)
External static pressure	0.70	0.70
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	0
Other device	0	0
Available static pressure	0.44	0.44

Total Effective Length

	Supply (ft)	Return (ft)
Measured length of run-out	4	7
Measured length of trunk	51	34
Equivalent length of fittings	320	260
Total length	375	302
Total effective length		676

Friction Rate

	Heating (in/100ft)		Cooling (in/100ft)	
Supply Ducts	0.065	OK	0.065	OK
Return Ducts	0.065	OK	0.065	OK

Fitting Equivalent Length Details

Supply	4AD=60, 2A1=45, 9I1=85, 9I1=85, 8AE=10, 1A=35: TotalEL=320
Return	8AE=10, 6M=20, 8AE=10, 10G=75, 8AE=10, 8AE=10, 8AE=10, 10G=75, 5D=40: TotalEL=260

