

BETH FREEMAN & KEN REDDICK HVAC LOAD ANALYSIS

for

KEN REDDICK
262 SW FREEMAN GLEN
LAKE CITY, FLORIDA 32024



Prepared By:

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Project Summary

Project:	BETH FREEMAN & KEN REDDICK	Company:	DAVID HALL'S INC.
Client:	KEN REDDICK	Representative:	DAVID HALL
Address:	262 SW FREEMAN GLEN	Address:	PO BOX 244
City:	LAKE CITY, FLORIDA 32024	City:	LAKE CITY, FL 32056
Phone:	386-755-3286	Phone:	386-755-9792
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		Comment:	

Design Data

Project Name:	BETH FREEMAN & KEN REDDICK
Reference City:	Jacksonville, Florida
Daily Temperature Range:	Medium
Latitude:	30 Degrees
Elevation:	26 Feet
Elevation Sensible Adj. Factor:	1.000
Elevation Total Adj. Factor:	1.000

	Outdoor Dry Bulb	Outdoor Wet Bulb	Indoor Rel.Hum.	Indoor Dry Bulb	Grains Difference
Winter:	27	N/A	N/A	72	N/A
Summer:	97	78	50%	73	54

Check Figures

Total Building Supply CFM:	1000	CFM per square foot:	0.662
Square feet of room area:	1,511	Square feet per ton:	482.068

Building Loads

Total heating required with outside air:	27,529 Btuh	27.529 MBH
Total sensible gain:	28,962 Btuh	82 %
Total latent gain:	6,216 Btuh	18 %
Total cooling required with outside air:	35,178 Btuh	2.931 Tons (based on sensible + latent)
		3.134 Tons (based on 77% sensible capacity)

Notes

Calculations are based on 7th edition of ACCA Manual J.
All computed results are estimates as building use and weather may vary.
Be sure to select a unit that meets both sensible and latent loads.

Miscellaneous Project Data

Project File Name: REDDICK, KEN

System Input Data

--System 1--	Outdoor Dry Bulb	Outdoor Wet Bulb	Indoor Rel.Hum.	Indoor Dry Bulb	Grains Difference
Winter:	27	N/A	N/A	72	N/A
Summer:	97	78	50%	73	54

External Overhangs

No.	Projection	Offset	No.	Projection	Offset
1	3	1	6	0	0
2	5	0	7	0	0
3	4	0.5	8	0	0
4	0	0	9	0	0
5	0	0	10	0	0

Duct Sizing Inputs

	Runouts		Main Trunk
Duct Material:	Flexible Duct		Galvanized Steel
Roughness Factor:	0.010000		0.000300
Pressure Drop:	1.0000 In.wg/100 Ft.		1.0000 In.wg/100 Ft.
Minimum Velocity:	450.0 Ft./Minute		650.0 Ft./Minute
Maximum Velocity:	750.0 Ft./Minute		900.0 Ft./Minute
Minimum Height:	0 Inches		0 Inches
Maximum Height:	0 Inches		0 Inches

Outside Air Data

	Winter		Summer
Infiltration:	0.900 AC/Hr		0.400 AC/Hr
Volume of Conditioned Space:	X 12670 Cu.Ft.		X 12670 Cu.Ft.
	11,403 Cu.Ft./Hr		5,068 Cu.Ft./Hr
	X 0.0167		X 0.0167
Total Building Infiltration:	190.05 CFM		84.46667 CFM
Total Building Ventilation:	0 CFM		0 CFM
--System 1--			
Infiltration & Ventilation Sensible Gain Multiplier:	26.40 = (1.10 X 24.00 Summer Temp. Difference)		
Infiltration & Ventilation Latent Gain Multiplier:	36.65 = (0.68 X 53.89 Grains Difference)		
Infiltration & Ventilation Sensible Loss Multiplier:	49.50 = (1.10 X 45.00 Winter Temp. Difference)		

Total Building Summary Loads

Component Description	Area Quan	Sen. Loss	Lat. Gain	Sen. Gain	Total Gain
3C Window Double Pane Clear Glass Metal Frame	139	4,534	0	8,665	8,665
11C Door Metal Polystyrene Core	63	1,332	0	816	816
12I Wall R-19 + 1/2" Asphlt Board(R-1.3)	1,180	2,920	0	1,792	1,792
16H Ceiling R-38 Insulation	1,511	1,767	0	1,885	1,885
22A Slab on Grade No Edge Insulation	170	6,197	0	0	0
Subtotals for structure:	3,063	16,750	0	13,158	13,158
Active People:	4	0	920	1,400	2,320
Inactive People:	0	0	0	0	0
Appliances:	0	0	2,200	2,200	4,400
Lighting:	0	0		7,161	
Ductwork:	0	1,371	0	2,813	2,813
Infiltration: Winter CFM: 190.0, Summer CFM: 84.5	202	9,408	3,096	2,230	5,326
Ventilation: Winter CFM: 0.0, Summer CFM: 0.0	0	0	0	0	0
Sensible Gain Total:				28,962	
Temperature Swing Multiplier:				X1.00	
Building Load Totals:		27,529	6,216	28,962	35,178

Check Figures

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Room Load Summary Reports

System #1 Room Load Summary

No	Room Name	Area SF	Htg Sens Btuh	Htg Nom CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Clg Lat Btuh	Clg Nom CFM	Zone Adj Fact	Clg Adj CFM	Air Sys CFM
---Zone 1---												
1	Sun Room	288	12,512	455	2-7	621	9,612	2,100	332	1.05	459	332
2	Kitchen/dining	360	6,059	220	2-6	595	6,765	2,320	234	1.25	384	234
3	Guest Bedroom	230	4,880	177	1-6	747	4,248	766	147	1.25	241	147
4	Foyer	48	414	15	1-3	631	897	0	31	1.00	41	31
5	Half Bath	36	82	3	1-3	563	800	0	28	1.00	36	28
6	Guest Bath	97	600	22	1-3	701	996	0	34	1.00	45	34
7	Laundry Room	60	490	18	1-5	599	2,365	800	82	1.00	108	82
8	Guest Closet	104	1,367	50	1-4	465	1,174	0	41	1.00	53	41
9	Living Room	288	1,125	41	2-3	740	2,105	230	73	1.00	96	73
System 1 Totals		1511	27,529	1,000			28,962	6,216	1,000		1,463	1,000
												Main Trunk Size: 15 in.

System #1 Cooling System Summary

	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	2.931	82%/18%	28,962	6,216	35,178
Recommended:	3.134	77%/23%	28,962	8,651	37,613