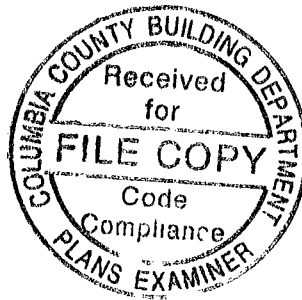


REGAN RESIDENCE HVAC LOAD ANALYSIS

for

ADAM'S CONSTRUCTION



Prepared By

DAVID HALL
DAVID HALL'S INC.
PO BOX 244
LAKE CITY FL 32056
386-755-9792
12/2/13

Project File Name: ADAM, REGAN

---System 1---	Outdoor Dry Bulb	Outdoor Wet Bulb	Indoor Rel.Hum.	Indoor Dry Bulb	Grains Difference
Winter:	31	N/A	N/A	72	N/A
Summer:	93	78	50%	75	57

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

	<u>Runouts</u>	<u>Main Trunk</u>
Duct Material:	Flexible Duct	Galvanized Steel
Roughness Factor:	0.010000	0.000300
Pressure Drop:	0.1000 In.wg/100 Ft.	0.1000 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

	<u>Winter</u>	<u>Summer</u>
Infiltration:	0.900 AC/Hr	0.400 AC/Hr
Volume of Conditioned Space:	X 10151 Cu.Ft.	X 10151 Cu.Ft.
	9,136 Cu.Ft./Hr	4,060 Cu.Ft./Hr
	X 0.0167	X 0.0167
Total Building Infiltration:	152.265 CFM	67.67333 CFM
Total Building Ventilation:	0 CFM	0 CFM
---System 1---		
Infiltration & Ventilation Sensible Gain Multiplier:	19.80 = (1.10 X 18.00 Summer Temp. Difference)	
Infiltration & Ventilation Latent Gain Multiplier:	38.46 = (0.68 X 56.56 Grains Difference)	
Infiltration & Ventilation Sensible Loss Multiplier:	45.10 = (1.10 X 41.00 Winter Temp. Difference)	

Component Description	Area Quan	Sen. Loss	Lat. Gain	Sen. Gain	Total Gain
3C Window Double Pane Clear Glass Metal Frame	221	6,572	0	10,590	10,590
9G French Door Double Clear Glass Wood Frame	36	770	0	2,563	2,563
10D Door Wood Solid Core	42	792	0	418	418
12C Wall R-11 + 1/2" Gypsum(R-0.5)	1,010	3,726	0	1,964	1,964
16G Ceiling R-30 Insulation	1,212	1,639	0	1,679	1,679
22A Slab on Grade No Edge Insulation	165	5,479	0	0	0
Subtotals for structure:	2,686	18,978	0	17,214	17,214
Active People:	3	0	690	900	1,590
Inactive People:	0	0	0	0	0
Appliances:	0	0	0	0	0
Lighting:	0	0		3,069	
Ductwork:	0	1,292	0	2,252	2,252
Infiltration: Winter CFM: 152.3, Summer CFM: 67 7	299	6,867	2,603	1,340	3,943
Ventilation: Winter CFM: 0.0, Summer CFM: 0.0	0	0	0	0	0
Sensible Gain Total:				24,775	
Temperature Swing Multiplier:				X1.00	
Building Load Totals:		27,137	3,293	24,775	28,068

Total Building Supply CFM:	1126	CFM per square foot:	0.887
Square feet of room area:	1,269	Square feet per ton:	473 282

Total heating required with outside air:	27,137 Btuh	27.137 MBH
Total sensible gain:	24,775 Btuh	88 %
Total latent gain:	3,293 Btuh	12 %
Total cooling required with outside air:	28,068 Btuh	2.339 Tons (based on sensible + latent)
		2.681 Tons (based on 77% sensible capacity)

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.

Component Description	Area Quan	Sen. Loss	Lat. Gain	Sen. Gain	Total Gain
3C Window Double Pane Clear Glass Metal Frame	221	6,572	0	10,590	10,590
9G French Door Double Clear Glass Wood Frame	36	770	0	2,563	2,563
10D Door Wood Solid Core	42	792	0	418	418
12C Wall R-11 + 1/2" Gypsum(R-0.5)	1,010	3,726	0	1,964	1,964
16G Ceiling R-30 Insulation	1,212	1,639	0	1,679	1,679
22A Slab on Grade No Edge Insulation	165	5,479	0	0	0
Subtotals for structure:	2,686	18,978	0	17,214	17,214
Active People:	3	0	690	900	1,590
Inactive People:	0	0	0	0	0
Appliances:	0	0	0	0	0
Lighting:	0	0		3,069	
Ductwork:	0	1,292	0	2,252	2,252
Infiltration: Winter CFM: 152.3, Summer CFM: 67.7	299	6,867	2,603	1,340	3,943
Ventilation: Winter CFM: 0.0, Summer CFM: 0.0	0	0	0	0	0
Sensible Gain Total:				24,775	
Temperature Swing Multiplier:				X1.00	
System Load Totals:		27,137	3,293	24,775	28,068

Supply CFM:	1,126	CFM per square foot:	0.887
Square feet of room area:	1,269	Square feet per ton:	473.282

Total heating required with outside air:	27,137 Btuh	27.137 MBH
Total sensible gain:	24,775 Btuh	88 %
Total latent gain:	3,293 Btuh	12 %
Total cooling required with outside air:	28,068 Btuh	2.339 Tons (based on sensible + latent)
		2.681 Tons (based on 77% sensible capacity)

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.

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	Bedroom	190	2,018	26	1-7	453	2,131	131	97	1.25	121	97
2	Bath	57	35	0	1-3	347	375	0	17	1.00	17	17
3	Hall	57	1,851	24	1-4	518	994	183	45	1.00	45	45
4	Game Room	412	11,531	150	2-9	580	11,278	1,687	513	1.00	513	513
5	Master Suite	306	6,343	82	2-8	475	5,831	839	265	1.25	331	265
6	Master Bath	189	3,701	48	2-5	537	3,220	270	146	1.00	146	146
7	Master Hall	58	1,658	22	1-4	493	946	183	43	1.00	43	43
System 1 Totals		1269	27,137	352			24,775	3,293	1,126		1,217	1,126
Main Trunk Size: 14x14 in.												

	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	2.339	88%/12%	24,775	3,293	28,068
Recommended:	2.681	77%/23%	24,775	7,400	32,175