

for

CASTAGNA CONSTRUCTION
1459 GRANDVIEW ST SUITE 107
LAKE CITY FL 32025



Prepared By:

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5/16/2022

Project: BAUGHN
Client: CASTAGNA CONSTRUCTION
Address: 1459 GRANDVIEW ST SUITE 107
City: LAKE CITY FL 32025
Phone: 386-755-6867
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Company: DAVID HALL'S INC.
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Comment:

Project Name: BAUGHN
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

	<u>Outdoor Dry Bulb</u>	<u>Outdoor Wet Bulb</u>	<u>Indoor Rel.Hum.</u>	<u>Indoor Dry Bulb</u>	<u>Grains Difference</u>
Winter:	27	N/A	N/A	72	N/A
Summer:	97	78	50%	75	50

Total Building Supply CFM: 1000
Square feet of room area: 1,900

CFM per square foot: 0.526
Square feet per ton: 588.476

Total heating required with outside air:	38,720 Btuh	38.720 MBH
Total sensible gain:	29,833 Btuh	81 %
Total latent gain:	7,013 Btuh	19 %
Total cooling required with outside air:	36,846 Btuh	3.07 Tons (based on sensible + latent)
		3.229 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.

Project File Name: CASTAGNA, BAUGHN

---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%	75	50

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

	Runouts		Main Trunk
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

	Winter		Summer
Infiltration:	0.900 AC/Hr		0.400 AC/Hr
Volume of Conditioned Space:	X 19519 Cu.Ft.		X 19519 Cu.Ft.
	17,567 Cu.Ft./Hr		7,808 Cu.Ft./Hr
	X 0.0167		X 0.0167
Total Building Infiltration:	292.785 CFM		130.1267 CFM
Total Building Ventilation:	0 CFM		0 CFM
---System 1---			
Infiltration & Ventilation Sensible Gain Multiplier:	24.20 = (1.10 X 22.00 Summer Temp. Difference)		
Infiltration & Ventilation Latent Gain Multiplier:	33.75 = (0.68 X 49.64 Grains Difference)		
Infiltration & Ventilation Sensible Loss Multiplier:	49.50 = (1.10 X 45.00 Winter Temp. Difference)		

Component Description	Area Quan	Sen. Loss	Lat. Gain	Sen. Gain	Total Gain
3B Window Double Pane Clear Glass TIM Frame	239	6,550	0	8,626	8,626
8O Glass Door Double Clear Glass Metal Frame	42	1,370	0	1,000	1,000
10D Door Wood Solid Core	21	435	0	247	247
12G Wall R-13 + 3/4" ExtPoly Board(R-3.8)	1,514	4,428	0	2,519	2,519
16G Ceiling R-30 Insulation	1,899	2,820	0	2,883	2,883
22A Slab on Grade No Edge Insulation	186	6,780	0	0	0
Subtotals for structure:	3,901	22,383	0	15,275	15,275
Active People:	4	0	920	1,200	2,120
Inactive People:	0	0	0	0	0
Appliances:	0	0	1,700	1,700	3,400
Lighting:	0	0	0	5,797	5,797
Ductwork:	0	1,844	0	2,714	2,714
Infiltration: Winter CFM: 292.8, Summer CFM: 130.1	302	14,493	4,393	3,147	7,540
Ventilation: Winter CFM: 0.0, Summer CFM: 0.0	0	0	0	0	0
Sensible Gain Total:				29,833	
Temperature Swing Multiplier:				X1.00	
Building Load Totals:	38,720	7,013	29,833	36,846	

Total Building Supply CFM: 1000
Square feet of room area: 1,900

CFM per square foot: 0.526
Square feet per ton: 588.476

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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	Master Closet	141	1,807	47	1-3	689	1,009	0	34	1.00	46	34
2	Master Bath	137	3,615	93	2-4	553	2,878	349	96	1.00	131	96
3	Master Bedroom	294	4,120	106	2-4	657	3,420	984	115	1.00	155	115
4	Laundry Room	117	2,622	68	1-5	545	2,218	805	74	1.00	101	74
5	Great Room	437	7,127	184	2-6	474	5,558	1,132	186	1.17	297	186
6	Kitchen	367	7,857	203	2-6	545	6,386	2,434	214	1.00	290	214
7	Bedroom #2	140	5,899	152	1-8	468	4,872	785	163	1.35	299	163
8	Bath	99	957	25	1-3	508	744	0	25	1.00	34	25
9	Bedroom #3	168	4,716	122	1-6	469	2,748	524	92	1.00	125	92
System 1 Totals		1900	38,720	1,000			29,833	7,013	1,000		1,478	1,000
Main Trunk Size: 16x12 in.												

	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	3.070	81%/19%	29,833	7,013	36,846
Recommended:	3.229	77%/23%	29,833	8,911	38,744