Air America Heating & Cooling, Inc.

PO Box 298 High Springs, Fl. 32655
CMC1250300

PROPOSAL FOR:

Rick Anderson Residence
837 SW Meadowlands Dr.
Lake City, Fl 32024

9/23/2024

Prepared 9/23/2024 using O'Brien Quick Loads Pro - Version 1.06 - SN: QP-070101-41073

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Heat Load Detail Report for Rick Anderson Residence

Room 1 of 3

Room Specifications: Great Room

Room Length (Ft.) :	38	Sq. Ft windows facing NE & NW:	--	Watts Incandescent Light:	--
Room Width (Ft.) :	24	Sq. Ft windows facing South:	20	Watts Flourescent Light:	100
Room Height (Ft.) :	8	Sq. Ft windows facing SE & SW:	--	Duct Length from A/H to room:	--
Exposed Wall Length (Ft.) :	86	Number of Exterior Doors:	1	Number of Large Electric Motors:	--
Wall against unconditioned room (Ft.) :	--	Sq. Ft. Exterior Doors:	21	Average Electric Motor Horsepower:	--
Sq. Ft windows facing North:	9	Number of People in Room:	3	BTUH Appliance Sensible Heat:	10000
Sq. Ft windows facing E & W:	39			BTUH Appliance Latent Heat:	--

Indoor/Outdoor Design Temperatures (degrees Farenheit)

Summer:		Winter:	
Inside (Thermostat setting) :	74	Inside (Thermostat setting) :	72
Outside (Above ground):	97	Outside (Above ground :	20
Outside (Below ground):	65	Outside (Below ground) :	60
Unconditioned Space :	97	Unconditioned Space :	65
Above Ceiling (Attic/Crawl Space) :	130	Above Ceiling (Attic/Crawl Space) :	45
Concrete Slab (Ground temperature) :	80	Concrete Slab (Ground temperature) :	55
Unconditioned Basement :	60	Unconditioned Basement :	55
Below Floor Crawl Space :	85	Below Floor Crawl Space :	50

Applicable Temperatures: Above Ceiling: Attic or Crawl Space Below Floor: Concrete Slab Exposed Walls: Above Ground

Design Conditions

Occupant Sensible Load (BTUH per person) :	250
Occupant Latent Load (BTUH per person) :	200
Duct Insulation Factor :	1
Duct Temperature Difference (Summer) :	20
Duct Temperature Difference (Winter) :	45
Humidity Difference Inside/Outside % (Summer) :	20
Humidity Difference Inside/Outside %(Winter) :	15
Fresh Air Per Person (CFM) :	2
Air Change Factor (Air change per hour) :	.5
Space Shading Factor :	.4
Air Handler Design Cooling (CFM per ton) :	400
Hydronic Heat (BTUH per linear ft :	600

Insulation Values (U-Factors)

Exposed Walls (Above Ground) :	.080
Exposed Walls (Below Ground) :	.5
Partitions :	.075
Roof/Ceiling :	.055
Floor (Above basement) :	.083
Floor (Concrete slab) :	.001
Floor (Between conditioned spaces) :	.287
Doors :	.500
Windows :	.900

Calculated Room Results - Summer Heat Gains

Wall Heat Gain (BTUH) :	1266	Appliance/Elec Motor Latent Heat Gain (BTUH) :	600
Ceiling or Roof Heat Gain (BTUH) :	2809	Appliance/Elec Motor Sensible Heat Gain (BTUH) :	11175
Floor Heat Gain (BTUH) :	5	Ventilation Latent Heat Gain (BTUH) :	1486
Glass Heat Gain (BTUH) :	1113	Ventilation Sensible Gain (BTUH) :	2755
Exterior Door & North Window Heat Gain (BTUH) :	290	Summer Total Latent Heat Gain:	2086
Solar Heat Gain (BTUH) :	3354	Summer Total Sensible Heat Gain (BTUH) :	22767
Total Transmission Heat Gain (BTUH) :	8837	**TOTAL SUMMER COOLING LOAD (BTUH) :**	**24854**

Calculated Room Results - Winter Heat Losses

Transmission Heat Losses (BTUH) :	7403	Latent Ventilation Heat Losses (BTUH) :	1115
Sensible Ventilation Heat Losses (BTUH) :	6229	Hydronic Heat(Linear Ft.) :	25
		TOTAL WINTER HEATING LOAD (BTUH) :	**14747**

Calculated Totals for Entire Structure

Size of Structure (Sq. Ft.):	1556	Total Sensible Heat Gain (BTUH):	33264
Total Heat Loss (BTUH):	23584	Total Cooling Gain (BTUH):	36327
Total Hydronic Heat (Linear Ft.):	39.31	Total Cooling Requirement (Tons):	3.03
Total Latent Heat Gain (BTUH):	3063	Total Cooling CFM:	1211

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Heat Load Detail Report for Rick Anderson Residence

Room 2 of 3

Room Specifications: Master

Room Length (Ft.) :	23	Sq. Ft windows facing NE & NW:	--	Watts Incandescent Light:	--
Room Width (Ft.) :	15	Sq. Ft windows facing South:	--	Watts Flourescent Light:	100
Room Height (Ft.) :	8	Sq. Ft windows facing SE & SW:	--	Duct Length from A/H to room:	--
Exposed Wall Length (Ft.) :	38	Number of Exterior Doors:	--	Number of Large Electric Motors:	--
Wall against unconditioned room (Ft.) :	--	Sq. Ft. Exterior Doors:	--	Average Electric Motor Horsepower:	--
Sq. Ft windows facing North:	--	Number of People in Room:	1	BTUH Appliance Sensible Heat:	--
Sq. Ft windows facing E & W:	30			BTUH Appliance Latent Heat:	--

Indoor/Outdoor Design Temperatures (degrees Farenheit)

Summer:		Winter:	
Inside (Thermostat setting) :	74	Inside (Thermostat setting) :	72
Outside (Above ground):	97	Outside (Above ground :	20
Outside (Below ground):	65	Outside (Below ground) :	60
Unconditioned Space :	97	Unconditioned Space :	65
Above Ceiling (Attic/Crawl Space) :	130	Above Ceiling (Attic/Crawl Space) :	45
Concrete Slab (Ground temperature) :	80	Concrete Slab (Ground temperature) :	55
Unconditioned Basement :	60	Unconditioned Basement :	55
Below Floor Crawl Space :	85	Below Floor Crawl Space :	50

Applicable Temperatures: Above Ceiling: Attic or Crawl Space Below Floor: Concrete Slab Exposed Walls: Above Ground

Design Conditions

Occupant Sensible Load (BTUH per person) :	250
Occupant Latent Load (BTUH per person) :	200
Duct Insulation Factor :	1
Duct Temperature Difference (Summer) :	20
Duct Temperature Difference (Winter) :	45
Humidity Difference Inside/Outside % (Summer) :	20
Humidity Difference Inside/Outside %(Winter) :	15
Fresh Air Per Person (CFM) :	2
Air Change Factor (Air change per hour) :	.5
Space Shading Factor :	.4
Air Handler Design Cooling (CFM per ton) :	400
Hydronic Heat (BTUH per linear ft :	600

Insulation Values (U-Factors)

Exposed Walls (Above Ground) :	.080
Exposed Walls (Below Ground) :	.5
Partitions :	.075
Roof/Ceiling :	.055
Floor (Above basement) :	.083
Floor (Concrete slab) :	.001
Floor (Between conditioned spaces) :	.287
Doors :	.500
Windows :	.900

Calculated Room Results - Summer Heat Gains

Wall Heat Gain (BTUH) :	559	Appliance/Elec Motor Latent Heat Gain (BTUH) :	200
Ceiling or Roof Heat Gain (BTUH) :	1063	Appliance/Elec Motor Sensible Heat Gain (BTUH) :	675
Floor Heat Gain (BTUH) :	2	Ventilation Latent Heat Gain (BTUH) :	309
Glass Heat Gain (BTUH) :	566	Ventilation Sensible Gain (BTUH) :	572
Exterior Door & North Window Heat Gain (BTUH) :	0	Summer Total Latent Heat Gain:	509
Solar Heat Gain (BTUH) :	2580	Summer Total Sensible Heat Gain (BTUH) :	6017
Total Transmission Heat Gain (BTUH) :	4770	**TOTAL SUMMER COOLING LOAD (BTUH) :**	**6526**

Calculated Room Results - Winter Heat Losses

Transmission Heat Losses (BTUH) :	3062	Latent Ventilation Heat Losses (BTUH) :	232
Sensible Ventilation Heat Losses (BTUH) :	1294	Hydronic Heat(Linear Ft.) :	8
		TOTAL WINTER HEATING LOAD (BTUH) :	**4588**

Calculated Totals for Entire Structure

Size of Structure (Sq. Ft.):	1556	Total Sensible Heat Gain (BTUH):	33264
Total Heat Loss (BTUH):	23584	Total Cooling Gain (BTUH):	36327
Total Hydronic Heat (Linear Ft.):	39.31	Total Cooling Requirement (Tons):	3.03
Total Latent Heat Gain (BTUH):	3063	Total Cooling CFM:	1211

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Heat Load Detail Report for Rick Anderson Residence

Room 3 of 3

Room Specifications: Bedroom 1

Room Length (Ft.) :	23	Sq. Ft windows facing NE & NW:	--	Watts Incandescent Light:	--
Room Width (Ft.) :	13	Sq. Ft windows facing South:	15	Watts Flourescent Light:	100
Room Height (Ft.) :	8	Sq. Ft windows facing SE & SW:	--	Duct Length from A/H to room:	--
Exposed Wall Length (Ft.) :	36	Number of Exterior Doors:	--	Number of Large Electric Motors:	--
Wall against unconditioned room (Ft.) :	--	Sq. Ft. Exterior Doors:	--	Average Electric Motor Horsepower:	--
Sq. Ft windows facing North:	--	Number of People in Room:	1	BTUH Appliance Sensible Heat:	--
Sq. Ft windows facing E & W:	15			BTUH Appliance Latent Heat:	--

Indoor/Outdoor Design Temperatures (degrees Farenheit)

Summer:		Winter:	
Inside (Thermostat setting) :	74	Inside (Thermostat setting) :	72
Outside (Above ground):	97	Outside (Above ground :	20
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Concrete Slab (Ground temperature) :	80	Concrete Slab (Ground temperature) :	55
Unconditioned Basement :	60	Unconditioned Basement :	55
Below Floor Crawl Space :	85	Below Floor Crawl Space :	50

Applicable Temperatures: Above Ceiling: Attic or Crawl Space Below Floor: Concrete Slab Exposed Walls: Above Ground

Design Conditions

Occupant Sensible Load (BTUH per person) :	250
Occupant Latent Load (BTUH per person) :	200
Duct Insulation Factor :	1
Duct Temperature Difference (Summer) :	20
Duct Temperature Difference (Winter) :	45
Humidity Difference Inside/Outside % (Summer) :	20
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Fresh Air Per Person (CFM) :	2
Air Change Factor (Air change per hour) :	.5
Space Shading Factor :	.4
Air Handler Design Cooling (CFM per ton) :	400
Hydronic Heat (BTUH per linear ft :	600

Insulation Values (U-Factors)

Exposed Walls (Above Ground) :	.080
Exposed Walls (Below Ground) :	.5
Partitions :	.075
Roof/Ceiling :	.055
Floor (Above basement) :	.083
Floor (Concrete slab) :	.001
Floor (Between conditioned spaces) :	.287
Doors :	.500
Windows :	.900

Calculated Room Results - Summer Heat Gains

Wall Heat Gain (BTUH) :	530	Appliance/Elec Motor Latent Heat Gain (BTUH) :	200
Ceiling or Roof Heat Gain (BTUH) :	921	Appliance/Elec Motor Sensible Heat Gain (BTUH) :	675
Floor Heat Gain (BTUH) :	2	Ventilation Latent Heat Gain (BTUH) :	268
Glass Heat Gain (BTUH) :	566	Ventilation Sensible Gain (BTUH) :	496
Exterior Door & North Window Heat Gain (BTUH) :	0	Summer Total Latent Heat Gain:	468
Solar Heat Gain (BTUH) :	1290	Summer Total Sensible Heat Gain (BTUH) :	4480
Total Transmission Heat Gain (BTUH) :	3308	**TOTAL SUMMER COOLING LOAD (BTUH) :**	**4947**

Calculated Room Results - Winter Heat Losses

Transmission Heat Losses (BTUH) :	2926	Latent Ventilation Heat Losses (BTUH) :	201
Sensible Ventilation Heat Losses (BTUH) :	1122	Hydronic Heat(Linear Ft.) :	7
		TOTAL WINTER HEATING LOAD (BTUH) :	**4249**

Calculated Totals for Entire Structure

Size of Structure (Sq. Ft.):	1556	Total Sensible Heat Gain (BTUH):	33264
Total Heat Loss (BTUH):	23584	Total Cooling Gain (BTUH):	36327
Total Hydronic Heat (Linear Ft.):	39.31	Total Cooling Requirement (Tons):	3.03
Total Latent Heat Gain (BTUH):	3063	Total Cooling CFM:	1211

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