FORM 405-10

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	AVE MARIA MODEL A 55 LOT-151	Builder Name:	
Street:	5108 Alcott Lane	Permit Office:	NAPLES
City, State, Zip:	NAPLES , FL ,	Permit Number:	
Owner:	THOMPSON (No Impact)	Jurisdiction:	211200
Design Location:	FL, NAPLES_MUNICIPAL		

1. New construction or existing	New (From Plans)			
2. Single family or multiple family	Single-family			
3. Number of units, if multiple family	1			
4. Number of Bedrooms	3			
5. Is this a worst case?	No			
6. Conditioned floor area above grade (ft²)	2079			
Conditioned floor area below grade (ft²)	0			
7. Windows (459.8 sqft.)	Description		Area	
a. U-Factor:	Sgl, U=1.13		459.85 ft²	
SHGC:	SHGC=0.49			
b. U-Factor:	N/A		ft²	
SHGC:				
c. U-Factor:	N/A		ft²	
SHGC:				
d. U-Factor:	N/A		ft²	
SHGC:				
Area Weighted Average Overhang Depth:			0.743 ft.	
Area Weighted Average SHGC:			0.490	
8. Floor Types (2079.0 sqft.)		Insulation	Area	
a. Slab-On-Grade Edge Insulation		R=0.0	2079.00 ft²	
b. N/A		R=	ft²	
c. N/A		R=	ft²	

9. Wall Types (2682.0 sqft.)	Insulation	Area	
a. Concrete Block - Int Insul, Exterior	R=4.1	2202.00 ft²	
b. Frame - Wood, Adjacent	R=11.0	480.00 ft²	
c. N/A	R=	ft²	
d. N/A	R=	ft²	
10. Ceiling Types (2079.0 sqft.)	Insulation	Area	
a. Under Attic (Vented)	R=30.0	2079.00 ft²	
b. N/A	R=	ft²	
c. N/A	R=	ft²	
11. Ducts		R	ft²
a. Sup: Attic, Ret: Attic, AH: Main		6	415
12. Cooling systems	kBtu/hr	Efficiency	
a. Central Unit	54.0	SEER:16.00	
13. Heating systems	kBtu/hr	Efficiency	
a. Electric Strip Heat	34.0	COP:1.00	
14. Hot water systems			
a. Electric		Cap: 80 gallons	
		EF: 0.920	
b. Conservation features			
None			
15. Credits		Pstat	

Glass/Floor Area: 0.221

Total Proposed Modified Loads: 40.99

Total Standard Reference Loads: 51.96

PASS

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code.

PREPARED BY: _____

DATE: _____

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: _____

DATE: _____

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.

BUILDING OFFICIAL: _____

DATE: _____

- **Compliance requires completion of a Florida Air Barrier and Insulation Inspection Checklist**

PROJECT

Title:	AVE MARIA MODEL A 55 LO	Bedrooms:	3	Address Type:	Street Address
Building Type:	User	Conditioned Area:	2079	Lot #	
Owner:	THOMPSON (No Impact)	Total Stories:	1	Block/SubDivision:	
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:		Rotate Angle:	45	Street:	5108 Alcott Lane
Permit Office:	NAPLES	Cross Ventilation:		County:	COLLIER
Jurisdiction:	211200	Whole House Fan:		City, State, Zip:	NAPLES , FL ,
Family Type:	Single-family				
New/Existing:	New (From Plans)				
Comment:					

CLIMATE

√	Design Location	TMY Site	IECC Zone	Design Temp 97.5 %	Design Temp 2.5 %	Int Design Temp Winter	Int Design Temp Summer	Heating Degree Days	Design Moisture	Daily Temp Range
_____	FL, NAPLES_MUNICIPAL	FL_NAPLES_MUNICIPAL	2	46	90	70	75	288.5	58	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	2079	24948

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	2079	24948	Yes	4	3	1	Yes	Yes	Yes

FLOORS

√	#	Floor Type	Space	Perimeter	R-Value	Area		Tile	Wood	Carpet
_____	1	Slab-On-Grade Edge Insulation	Main	222 ft	0	2079 ft²	----	0	0	1

ROOF

√	#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
_____	1	Hip	Barrel tile	2252 ft²	0 ft²	White	0.25	No	0.9	No	30	22.6

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Vented	150	2079 ft²	N	N

CEILING

√	#	Ceiling Type	Space	R-Value	Area	Framing Frac	Truss Type
_____	1	Under Attic (Vented)	Main	30	2079 ft²	0.11	Wood

WALLS

√	#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
____	1	S=>SW	Exterior	Concrete Block - Int Insul	Main	4.1	19		12		228.0 ft²	0.16	0	0.25	0
____	2	W=>NW	Exterior	Concrete Block - Int Insul	Main	4.1	53		12		636.0 ft²	0.16	0	0.25	0
____	3	N=>NE	Exterior	Concrete Block - Int Insul	Main	4.1	21		12		252.0 ft²	0.16	0	0.25	0
____	4	E=>SE	Exterior	Concrete Block - Int Insul	Main	4.1	20		12		240.0 ft²	0.16	0	0.25	0
____	5	N=>NE	Exterior	Concrete Block - Int Insul	Main	4.1	12		12		144.0 ft²	0.16	0	0.25	0
____	6	E=>SE	Exterior	Concrete Block - Int Insul	Main	4.1	10	6	12		126.0 ft²	0.16	0	0.25	0
____	7	N=>NE	Exterior	Concrete Block - Int Insul	Main	4.1	7		12		84.0 ft²	0.16	0	0.25	0
____	8	E=>SE	Exterior	Concrete Block - Int Insul	Main	4.1	41		12		492.0 ft²	0.16	0	0.25	0
____	9	S=>SW	Garage	Frame - Wood	Main	11	40		12		480.0 ft²	0.16	0.23	0.01	0

DOORS

√	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
_____	1	S=>SW	Wood	Main	None	.29	3	4	8	2	27.2 ft²
_____	2	S=>SW	Insulated	Main	None	.28	3		6	8	20 ft²

WINDOWS

Orientation shown is the entered orientation (=>) changed to As Built (rotated 45 degrees).

√	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Area	Overhang Depth	Overhang Separation	Int Shade	Screening
_____	1	S=>SW	1	Metal	Single (Tinted)	Yes	1.13	0.49	39.5 ft²	1 ft 0 in	7 ft 0 in	Drapes/blinds	None
_____	2	W=>NW	2	Metal	Single (Tinted)	Yes	1.13	0.49	70.1 ft²	1 ft 0 in	6 ft 0 in	Drapes/blinds	None
_____	3	W=>NW	2	Metal	Single (Tinted)	Yes	1.13	0.49	13.1 ft²	1 ft 0 in	5 ft 0 in	Drapes/blinds	None
_____	4	N=>NE	3	Metal	Single (Tinted)	Yes	1.13	0.49	39.0 ft²	1 ft 0 in	7 ft 0 in	Drapes/blinds	None
_____	5	E=>SE	4	Metal	Single (Tinted)	Yes	1.13	0.49	39.5 ft²	1 ft 0 in	7 ft 0 in	Drapes/blinds	None
_____	6	N=>NE	3	Metal	Single (Tinted)	Yes	1.13	0.49	57.4 ft²	1 ft 0 in	6 ft 0 in	Drapes/blinds	None
_____	7	E=>SE	6	Metal	Single (Tinted)	Yes	1.13	0.49	27.0 ft²	1 ft 0 in	5 ft 0 in	Drapes/blinds	None
_____	8	E=>SE	8	Metal	Single (Tinted)	Yes	1.13	0.49	28.0 ft²	1 ft 0 in	6 ft 0 in	Drapes/blinds	None
_____	9	N=>NE	7	Metal	Single (Tinted)	Yes	1.13	0.49	28.0 ft²	1 ft 0 in	6 ft 0 in	Drapes/blinds	None
_____	10	E=>SE	8	Metal	Single (Tinted)	Yes	1.13	0.49	118.1 ft²	0 ft 0 in	0 ft 0 in	Drapes/blinds	None

GARAGE

√	#	Floor Area	Ceiling Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
_____	1	441.96 ft²	441.96 ft²	64 ft	8 ft	1

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Best Guess	.0005	2726.6	149.69	281.51	.375	6.5575

HEATING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Block	Ducts
_____	1	Electric Strip Heat	None	COP: 1	34 kBtu/hr	1	sys#1

COOLING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
_____	1	Central Unit	None	SEER: 16	54 kBtu/hr	1620 cfm	0.6	1	sys#1

HOT WATER SYSTEM

√	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
_____	1	Electric	None	Main	0.92	80 gal	60 gal	120 deg	None

SOLAR HOT WATER SYSTEM

√	FSEC Cert #	Company Name	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
_____	None	None			ft²		

DUCTS

√	#	---- Supply ---- Location	R-Value	Area	---- Return ---- Location	Area	Leakage Type	Air Handler	CFM 25 TOT	CFM25 OUT	QN	RLF	HVAC # Heat	Cool
_____	1	Attic	6	415 ft²	Attic	110 ft²	Default Leakage	Main	(Default) c	(Default) c			1	1

TEMPERATURES

Programable Thermostat: Y

Ceiling Fans:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cooling	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[X]	[X]	[ ]	[ ]	[ ]
Heating	[X]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]
Venting	[ ]	[ ]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[ ]

Thermostat Schedule: HERS 2006 Reference

Schedule Type		Hours 1	2	3	4	5	6	7	8	9	10	11	12
Cooling (WD)	AM	78	78	78	78	78	78	78	78	80	80	80	80
	PM	80	80	78	78	78	78	78	78	78	78	78	78
Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78
	PM	78	78	78	78	78	78	78	78	78	78	78	78
Heating (WD)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66
Heating (WEH)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66

FORM 405-10

Florida Code Compliance Checklist

Florida Department of Business and Professional Regulations
Residential Whole Building Performance Method

ADDRESS: 5108 Alcott Lane
NAPLES, FL,

PERMIT #:

MANDATORY REQUIREMENTS SUMMARY - See individual code sections for full details.

COMPONENT	SECTION	SUMMARY OF REQUIREMENT(S)	CHECK
Air leakage	402.4	To be caulked, gasketed, weatherstripped or otherwise sealed. Recessed lighting IC-rated as meeting ASTM E 283. Windows and doors = 0.30 cfm/sq.ft. Testing or visual inspection required. Fireplaces: gasketed doors & outdoor combustion air. Must complete envelope leakage report or visually verify Table 402.4.2.	✓
Thermostat & controls	403.1	At least one thermostat shall be provided for each separate heating and cooling system. Where forced-air furnace is primary system, programmable thermostat is required. Heat pumps with supplemental electric heat must prevent supplemental heat when compressor can meet the load.	✓
Ducts	403.2.2 403.3.3	All ducts, air handlers, filter boxes and building cavities which form the primary air containment passageways for air distribution systems shall be considered ducts or plenum chambers, shall be constructed and sealed in accordance with Section 503.2.7.2 of this code. Building framing cavities shall not be used as supply ducts.	✓
Water heaters	403.4	Heat trap required for vertical pipe risers. Comply with efficiencies in Table 403.4.3.2. Provide switch or clearly marked circuit breaker (electric) or shutoff (gas). Circulating system pipes insulated to = R-2 + accessible manual OFF switch.	✓
Mechanical ventilation	403.5	Homes designed to operate at positive pressure or with mechanical ventilation systems shall not exceed the minimum ASHRAE 62 level. No make-up air from attics, crawlspaces, garages or outdoors adjacent to pools or spas.	✓
Swimming Pools & Spas	403.9	Pool pumps and pool pump motors with a total horsepower (HP) of = 1 HP shall have the capability of operating at two or more speeds. Spas and heated pools must have vapor-retardant covers or a liquid cover or other means proven to reduce heat loss except if 70% of heat from site-recovered energy. Off/timer switch required. Gas heaters minimum thermal efficiency=78% (82% after 4/16/13). Heat pump pool heaters minimum COP= 4.0.	✓
Cooling/heating equipment	403.6	Sizing calculation performed & attached. Minimum efficiencies per Tables 503.2.3. Equipment efficiency verification required. Special occasion cooling or heating capacity requires separate system or variable capacity system. Electric heat >10kW must be divided into two or more stages.	✓
Ceilings/knee walls	405.2.1	R-19 space permitting.	✓

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 79

The lower the EnergyPerformance Index, the more efficient the home.

5108 Alcott Lane, NAPLES, FL,

1. New construction or existing		New (From Plans)
2. Single family or multiple family		Single-family
3. Number of units, if multiple family		1
4. Number of Bedrooms		3
5. Is this a worst case?		No
6. Conditioned floor area (ft²)		2079
7. Windows**	Description	Area
a. U-Factor: SHGC:	Sgl, U=1.13 SHGC=0.49	459.85 ft²
b. U-Factor: SHGC:	N/A	ft²
c. U-Factor: SHGC:	N/A	ft²
d. U-Factor: SHGC:	N/A	ft²
Area Weighted Average Overhang Depth:		0.743 ft.
Area Weighted Average SHGC:		0.490

8. Floor Types	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	2079.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

9. Wall Types	Insulation	Area
a. Concrete Block - Int Insul, Exterior	R=4.1	2202.00 ft²
b. Frame - Wood, Adjacent	R=11.0	480.00 ft²
c. N/A	R=	ft²
d. N/A	R=	ft²

10. Ceiling Types	Insulation	Area
a. Under Attic (Vented)	R=30.0	2079.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

11. Ducts	R	ft²
a. Sup: Attic, Ret: Attic, AH: Main	6	415

12. Cooling systems	kBtu/hr	Efficiency
a. Central Unit	54.0	SEER:16.00

13. Heating systems	kBtu/hr	Efficiency
a. Electric Strip Heat	34.0	COP:1.00

14. Hot water systems	
a. Electric	Cap: 80 gallons EF: 0.92
b. Conservation features None	
15. Credits	Pstat

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

Builder Signature: _____ Date: _____

Address of New Home: _____ City/FL Zip: _____

*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida EnergyGauge Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

**Label required by Section 303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

Residential System Sizing Calculation

Summary

THOMPSON (No Impact)
5108 Alcott Lane
NAPLES, FL

Project Title:
AVE MARIA MODEL A 55 LOT-151

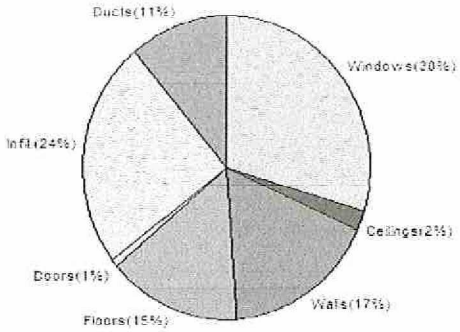
3/22/2014

Location for weather data: Naples, FL - Defaults: Latitude(26.15) Altitude(3 ft.) Temp Range(M) Humidity data: Interior RH (50%) Outdoor wet bulb (78F) Humidity difference(58gr.)					
Winter design temperature(TMY3 99%)	43	F	Summer design temperature(TMY3 99%)	91	F
Winter setpoint	70	F	Summer setpoint	75	F
Winter temperature difference	27	F	Summer temperature difference	16	F
Total heating load calculation	**46698**	**Btuh**	**Total cooling load calculation**	**53681**	**Btuh**
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Strip Heat)	72.8	34000	Sensible (SHR = 0.60)	88.5	32400
			Latent	126.4	21600
			Total	100.6	54000

WINTER CALCULATIONS

Winter Heating Load (for 2079 sqft)

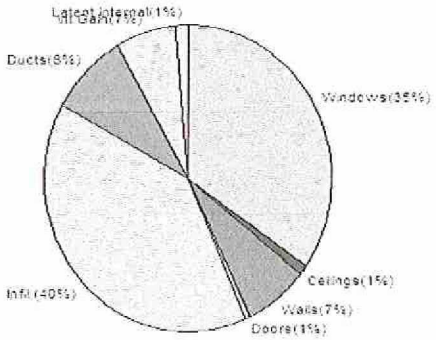
Load component			Load	
Window total	460	sqft	14030	Btuh
Wall total	2175	sqft	7918	Btuh
Door total	47	sqft	364	Btuh
Ceiling total	2079	sqft	961	Btuh
Floor total	2079	sqft	7073	Btuh
Infiltration	374	cfm	11113	Btuh
Duct loss			5239	Btuh
Subtotal			**46698**	**Btuh**
Ventilation	0	cfm	0	Btuh
TOTAL HEAT LOSS			**46698**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 2079 sqft)

Load component			Load	
Window total	460	sqft	18641	Btuh
Wall total	2175	sqft	3692	Btuh
Door total	47	sqft	364	Btuh
Ceiling total	2079	sqft	570	Btuh
Floor total			0	Btuh
Infiltration	374	cfm	6586	Btuh
Internal gain			3720	Btuh
Duct gain			3026	Btuh
Sens. Ventilation	0	cfm	0	Btuh
Blower Load			0	Btuh
Total sensible gain			**36598**	**Btuh**
Latent gain(ducts)			1525	Btuh
Latent gain(infiltration)			14758	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			800	Btuh
Total latent gain			**17083**	**Btuh**
TOTAL HEAT GAIN			**53681**	**Btuh**



8th Edition

EnergyGauge® System Sizing
PREPARED BY: _____
DATE: _____

AIR CONDITIONING MECHANICAL CONTRACTORS ASSOCIATION
CAC 1816665

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

THOMPSON (No Impact)
5108 Alcott Lane
NAPLES, FL

Project Title:
AVE MARIA MODEL A 55 LOT-151
Building Type: User

3/22/2014

Reference City: Naples, FL (Defaults) Winter Temperature Difference: 27.0 F (TMY3 99%)

Component Loads for Whole House

Window	Panes/Type	Frame	U	Orientation	Area(sqft) X	HTM=	Load
1	1, NFRC 0.49	Metal	1.13	SW	39.5	30.5	1206 Btuh
2	1, NFRC 0.49	Metal	1.13	NW	70.1	30.5	2140 Btuh
3	1, NFRC 0.49	Metal	1.13	NW	13.1	30.5	400 Btuh
4	1, NFRC 0.49	Metal	1.13	NE	39.0	30.5	1191 Btuh
5	1, NFRC 0.49	Metal	1.13	SE	39.5	30.5	1206 Btuh
6	1, NFRC 0.49	Metal	1.13	NE	57.4	30.5	1751 Btuh
7	1, NFRC 0.49	Metal	1.13	SE	27.0	30.5	824 Btuh
8	1, NFRC 0.49	Metal	1.13	SE	28.0	30.5	854 Btuh
9	1, NFRC 0.49	Metal	1.13	NE	28.0	30.5	854 Btuh
10	1, NFRC 0.49	Metal	1.13	SE	118.1	30.5	3604 Btuh
	Window Total				459.8(sqft)		14030 Btuh

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Conc Blk,Hollow	- Ext	(0.146)	4.1/0.2	161	3.94	635 Btuh
2	Conc Blk,Hollow	- Ext	(0.146)	4.1/0.2	553	3.94	2175 Btuh
3	Conc Blk,Hollow	- Ext	(0.146)	4.1/0.2	156	3.94	612 Btuh
4	Conc Blk,Hollow	- Ext	(0.146)	4.1/0.2	200	3.94	789 Btuh
5	Conc Blk,Hollow	- Ext	(0.146)	4.1/0.2	144	3.94	567 Btuh
6	Conc Blk,Hollow	- Ext	(0.146)	4.1/0.2	99	3.94	390 Btuh
7	Conc Blk,Hollow	- Ext	(0.146)	4.1/0.2	56	3.94	220 Btuh
8	Conc Blk,Hollow	- Ext	(0.146)	4.1/0.2	346	3.94	1361 Btuh
9	Frame - Wood	- Adj	(0.094)	11.0/0.2	460	2.54	1169 Btuh
	Wall Total				2175(sqft)		7918 Btuh

Doors	Type	Storm	Ueff.	Area X	HTM=	Load
1	Wood - Exterior,	n	(0.290)	27	7.8	213 Btuh
2	Insulated - Garage,	n	(0.280)	20	7.6	151 Btuh
	Door Total			47(sqft)		364Btuh

Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
1	Vented Attic/W/Tile	(0.017)	30.0/30.0	2079	0.5	961 Btuh
	Ceiling Total			2079(sqft)		961Btuh

Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	222.0 ft(perim.)	31.9	7073 Btuh
	Floor Total			2079 sqft		7073 Btuh

	Envelope Subtotal:	30346 Btuh

Infiltration	Type	Wholehouse ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural	0.90	24948	1.00	374.2	11113 Btuh

Duct load	Average sealed, R6.0, Supply(Att), Return(Att)	(DLM of 0.126)	5239 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

THOMPSON (No Impact)
5108 Alcott Lane
NAPLES, FL

Project Title:
AVE MARIA MODEL A 55 LOT-151
Building Type: User

3/22/2014

All Zones	**Sensible Subtotal All Zones**	**46698 Btuh**

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	46698 Btuh 0 Btuh 46698 Btuh

EQUIPMENT

1. Electric Strip Heat		34000 Btuh

Key: Window types - NFRC (Requires U-Factor and Shading coefficient(SHGC) of glass as numerical values)
or - Glass as 'Clear' or 'Tint' (Uses U-Factor and SHGC defaults)
U - (Window U-Factor)
HTM - (ManualJ Heat Transfer Multiplier)

Version 8

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

THOMPSON (No Impact)
5108 Alcott Lane
NAPLES, FL

Project Title:
AVE MARIA MODEL A 55 LOT-151

3/22/2014

Reference City: Naples, FL Temperature Difference: 16.0F(TMY3 99%) Humidity difference: 58gr.

Component Loads for Whole House

Window	Type* Panes	SHGC	U	InSh	IS	Ornt	Overhang Len	Hgt	Window Area(sqft) Gross	Shaded	Unshaded	HTM Shaded	Unshaded	Load
1	1 NFRC	0.49,	1.13	B-L	No	SW	1.0ft.	7.0ft.	39.5	0.0	39.5	23	41	1621 Btuh
2	1 NFRC	0.49,	1.13	B-L	No	NW	1.0ft.	6.0ft.	70.1	0.0	70.1	23	40	2803 Btuh
3	1 NFRC	0.49,	1.13	B-L	No	NW	1.0ft.	5.0ft.	13.1	0.0	13.1	23	40	524 Btuh
4	1 NFRC	0.49,	1.13	B-L	No	NE	1.0ft.	7.0ft.	39.0	0.0	39.0	23	40	1560 Btuh
5	1 NFRC	0.49,	1.13	B-L	No	SE	1.0ft.	7.0ft.	39.5	0.0	39.5	23	41	1621 Btuh
6	1 NFRC	0.49,	1.13	B-L	No	NE	1.0ft.	6.0ft.	57.4	0.0	57.4	23	40	2294 Btuh
7	1 NFRC	0.49,	1.13	B-L	No	SE	1.0ft.	5.0ft.	27.0	0.0	27.0	23	41	1107 Btuh
8	1 NFRC	0.49,	1.13	B-L	No	SE	1.0ft.	6.0ft.	28.0	0.0	28.0	23	41	1148 Btuh
9	1 NFRC	0.49,	1.13	B-L	No	NE	1.0ft.	6.0ft.	28.0	0.0	28.0	23	40	1119 Btuh
10	1 NFRC	0.49,	1.13	B-L	No	SE	0.0ft.	0.0ft.	118.1	0.0	118.1	23	41	4843 Btuh
	Window Total								460 (sqft)					18641 Btuh

Walls	Type	U-Value	R-Value Cav/Sheath	Area(sqft)	HTM	Load
1	Concrete Blk,Hollow - Ext	0.15	4.1/0.2	161.2	1.7	282 Btuh
2	Concrete Blk,Hollow - Ext	0.15	4.1/0.2	552.8	1.7	967 Btuh
3	Concrete Blk,Hollow - Ext	0.15	4.1/0.2	155.6	1.7	272 Btuh
4	Concrete Blk,Hollow - Ext	0.15	4.1/0.2	200.5	1.7	351 Btuh
5	Concrete Blk,Hollow - Ext	0.15	4.1/0.2	144.0	1.7	252 Btuh
6	Concrete Blk,Hollow - Ext	0.15	4.1/0.2	99.0	1.7	173 Btuh
7	Concrete Blk,Hollow - Ext	0.15	4.1/0.2	56.0	1.7	98 Btuh
8	Concrete Blk,Hollow - Ext	0.15	4.1/0.2	345.9	1.7	605 Btuh
9	Frame - Wood - Adj	0.09	11.0/0.2	460.0	1.5	693 Btuh
	Wall Total			2175 (sqft)		3692 Btuh

Doors	Type	Area (sqft)	HTM	Load
1	Wood - Exterior	27.2	7.8	213 Btuh
2	Insulated - Garage	20.0	7.6	151 Btuh
	Door Total	47 (sqft)		364 Btuh

Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load
1	Vented Attic/White/Tile	0.017	30.0/30.0	2079.0	0.27	570 Btuh
	Ceiling Total			2079 (sqft)		570 Btuh

Floors	Type	R-Value	Size	HTM	Load
1	Slab On Grade	0.0	2079 (ft-perimeter)	0.0	0 Btuh
	Floor Total		2079.0 (sqft)		0 Btuh

			Load
	Envelope Subtotal:		23267 Btuh

Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.90	24948	1	374.2	6586 Btuh

Internal gain		Occupants	Btuh/occupant		Appliance	Load
		4	X 230	+	2800	3720 Btuh
				Sensible Envelope Load:		33573 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

THOMPSON (No Impact)
5108 Alcott Lane
NAPLES, FL

Project Title:
AVE MARIA MODEL A 55 LOT-151

Climate:FL_NAPLES_MUNICIPAL

3/22/2014

Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic)	(DGM of 0.090)	3026 Btuh
		Sensible Load All Zones	**36598 Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

THOMPSON (No Impact)
5108 Alcott Lane
NAPLES, FL

Project Title:
AVE MARIA MODEL A 55 LOT-151

Climate:FL_NAPLES_MUNICIPAL

3/22/2014

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	**Sensible Envelope Load All Zones**	**33573 Btuh**
	Sensible Duct Load	3026 Btuh
	Total Sensible Zone Loads	**36598 Btuh**
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	**36598 Btuh**
	Latent infiltration gain (for 58 gr. humidity difference)	14758 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1525 Btuh
	Latent occupant gain (4.0 people @ 200 Btuh per person)	800 Btuh
	Latent other gain	0 Btuh
	Latent total gain	**17083 Btuh**
	TOTAL GAIN	**53681 Btuh**

EQUIPMENT

1. Central Unit	#	54000 Btuh

*Key: Window types (Panes - Number and type of panes of glass)
(SHGC - Shading coefficient of glass as SHGC numerical value)
(U - Window U-Factor)
(InSh - Interior shading device: none(No), Blinds(B), Draperies(D) or Roller Shades(R))
- For Blinds: Assume medium color, half closed
For Draperies: Assume medium weave, half closed
For Roller shades: Assume translucent, half closed
(IS - Insect screen: none(N), Full(F) or Half(½))
(Ornt - compass orientation)

Version 8