FORM 405-10

20

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	Smith Residence	Builder Name:	Little and Williams, Inc.
Street:	530 SW Tiny Gln	Permit Office:	
City, State, Zip:	Lake City , FL , 32024-	Permit Number:	
Owner:	Smith	Jurisdiction:	
Design Location:	FL, Gainesville		

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)	1556
Conditioned floor area below grade (ft²)	0

7. Windows(133.0 sqft.)	Description	Area
a. U-Factor:	Dbl, U=0.45	133.00 ft²
SHGC:	SHGC=0.31	
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:		2.962 ft.
Area Weighted Average SHGC:		0.310

8. Floor Types (1556.0 sqft.)	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	1556.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

9. Wall Types (1310.0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	1310.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²
d. N/A	R=	ft²

10. Ceiling Types (1556.0 sqft.)	Insulation	Area
a. Under Attic (Vented)	R=30.0	1556.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

11. Ducts	R	ft²
a. Sup: Attic, Ret: Attic, AH: Main	6	311.2

12. Cooling systems	kBtu/hr	Efficiency
a. Central Unit	35.0	SEER:13.00

13. Heating systems	kBtu/hr	Efficiency
a. Electric Heat Pump	33.6	HSPF:8.00

14. Hot water systems	
a. Electric	Cap: 50 gallons
	EF: 0.960
b. Conservation features	
None	
15. Credits	CF, Pstat

Glass/Floor Area: 0.085

Total Proposed Modified Loads: 28.99

Total Standard Reference Loads: 36.38

PASS

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

PREPARED BY: _____

DATE: 5/15/13

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**

COLUMBIA COUNTY BUILDING DEPARTMENT
Received for FILE COPY
Code Compliance
PLANS EXAMINER

Ronald E. Miller, Jr.
Certified Commercial Energy Rater #960

PROJECT

Title:	Smith Residence	Bedrooms:	3	Address Type:	Street Address
Building Type:	User	Conditioned Area:	1556	Lot #	
Owner:	Smith	Total Stories:	1	Block/SubDivision:	
# of Units:	1	Worst Case:	No	PlatBook:	
Builder Name:	Little and Williams, Inc.	Rotate Angle:	0	Street:	530 SW Tiny Gln
Permit Office:		Cross Ventilation:		County:	Columbia
Jurisdiction:		Whole House Fan:		City, State, Zip:	Lake City , FL , 32024-
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, Gainesville	FL_GAINESVILLE_REGI	2	32	92	70	75	1305.5	51	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	1556	12448

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	1556	12448	Yes	3	3	1	Yes	Yes	Yes

FLOORS

√	#	Floor Type	Space	Perimeter	R-Value	Area		Tile	Wood	Carpet
✓	1	Slab-On-Grade Edge Insulatio	Main	163.75 ft	0	1556 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	Gable or shed	Composition shingles	1740 ft²	390 ft²	Dark	0.96	No	0.9	No	0	26.6

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
✓	1	Full attic	Vented	300	1556 ft²	N	N

CEILING

√	#	Ceiling Type	Space	R-Value	Area	Framing Frac	Truss Type
✓	1	Under Attic (Vented)	Main	30	1556 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	N	Exterior	Frame - Wood	Main	13	30		8		240 ft²		0.23	0.75	0
✓	2	E	Exterior	Frame - Wood	Main	13	51	10.5	8		415 ft²		0.23	0.75	0
✓	3	S	Exterior	Frame - Wood	Main	13	30		8		240 ft²		0.23	0.75	0
✓	4	W	Exterior	Frame - Wood	Main	13	51	10.5	8		415 ft²		0.23	0.75	0

DOORS

√	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
✓	1	E	Insulated	Main	None	0.460000	3		6	8	20 ft²
✓	2	W	Insulated	Main	None	0.460000	3		6	8	17.77777
✓	3	W	Insulated	Main	None	0.460000	3		6	8	20 ft²

WINDOWS

Orientation shown is the entered, Proposed orientation.

√	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Overhang Area	Overhang Depth	Overhang Separation	Int Shade	Screening
✓	1	N	1	Vinyl	Low-E Double	Yes	0.45	0.31	10 ft²	1 ft 0 in	4 ft 0 in	Drapes/blinds	None
✓	2	W	4	Vinyl	Low-E Double	Yes	0.45	0.31	15 ft²	10 ft 0 in	1 ft 0 in	Drapes/blinds	None
✓	3	W	4	Vinyl	Low-E Double	Yes	0.45	0.31	10 ft²	10 ft 0 in	1 ft 0 in	Drapes/blinds	None
✓	4	W	4	Vinyl	Low-E Double	Yes	0.45	0.31	4 ft²	10 ft 0 in	1 ft 0 in	Drapes/blinds	None
✓	5	S	3	Vinyl	Low-E Double	Yes	0.45	0.31	9 ft²	1 ft 0 in	4 ft 0 in	Drapes/blinds	None
✓	6	S	3	Vinyl	Low-E Double	Yes	0.45	0.31	20 ft²	1 ft 0 in	4 ft 0 in	Drapes/blinds	None
✓	7	E	2	Vinyl	Low-E Double	Yes	0.45	0.31	20 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
✓	8	E	2	Vinyl	Low-E Double	Yes	0.45	0.31	30 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None
✓	9	N	1	Vinyl	Low-E Double	Yes	0.45	0.31	15 ft²	1 ft 0 in	1 ft 0 in	Drapes/blinds	None

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Best Guess	0.000500	2040.7	112.03	210.69	0.3850	9.8363

HEATING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Block	Ducts
✓	1	Electric Heat Pump	SPVHP(COP)	HSPF: 8	33.6 kBtu/hr	1	sys#1

COOLING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
✓	1	Central Unit	Split	SEER: 13	35 kBtu/hr	1050 cfm	0.75	1	sys#1

HOT WATER SYSTEM

✓	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
✓	1	Electric	None	Main	0.96	50 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	Percent Leakage	QN	RLF	HVAC # Heat	HVAC # Cool
✓	1	Attic	6	311.2 ft	Attic	77.8 ft²	Default Leakage	Main	(Default)	(Default) %			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: 530 SW Tiny Gln
Lake City, FL, 32024-

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.	RA
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.	RA
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.	RA
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.	RA
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.	RA
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.	N/A
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.	RA
Ceilings/knee walls	405.2.1	R-19 space permitting.	RA

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Load Short Form
Entire House
Dependable Heating and Air

Job: 13-025-01
Date: May 15, 2013
By: Ron Miller

Project Information

For: Smith Residence
530 SW Tiny Glenn, Lake City, FL 32024

Design Information

	Htg	Clg
Outside db (°F)	33	92
Inside db (°F)	70	75
Design TD (°F)	37	17
Daily range	-	M
Inside humidity (%)	30	50
Moisture difference (gr/lb)	11	52

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

HEATING EQUIPMENT

Make	Goodman Mfg.
Trade	GOODMAN, JANITROL, AMANA DISTI...
Model	GSH130361B*
AHRI ref	4692017

Efficiency	7.7 HSPF	
Heating input		
Heating output	31400	Btuh @ 47°F
Temperature rise	25	°F
Actual air flow	1127	cfm
Air flow factor	0.071	cfm/Btuh
Static pressure	0	in H2O
Space thermostat		

COOLING EQUIPMENT

Make	Goodman Mfg.
Trade	GOODMAN, JANITROL, AMANA DISTI...
Cond	GSH130361B*
Coil	AR*F374316B*
AHRI ref	4692017

Efficiency	11.0 EER, 13 SEER	
Sensible cooling	23660	Btuh
Latent cooling	10140	Btuh
Total cooling	33800	Btuh
Actual air flow	1127	cfm
Air flow factor	0.053	cfm/Btuh
Static pressure	0	in H2O
Load sensible heat ratio	0.85	

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Master Bedroom	221	2718	3587	193	192
Master Bath/CL	185	2094	1439	149	77
Great Room	284	2456	4696	174	251
Kitchen/Dining	281	1976	3993	140	213
Guest Bath	101	1333	704	95	38
Bedroom 2	156	1909	2589	136	138
Hall Closet	20	256	136	18	7
Bedroom 3	156	2084	2637	148	141
Utility	81	966	1221	69	65
Hallway	52	77	98	5	5

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

Entire House Other equip loads Equip. @ 0.97 RSM Latent cooling	d	1538	15870 0	21100 0 20467 3779	1127	1127
TOTALS		1538	15870	24246	1127	1127

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

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Loads for Multiple Orientations
Entire House
Dependable Heating and Air

Job: 13-025-01
Date: May 15, 2013
By: Ron Miller

Project Information

For: Smith Residence
530 SW Tiny Glenn, Lake City, FL 32024

Design Conditions

Location:
Gainesville, FL, US
Elevation: 151 ft
Latitude: 30°N

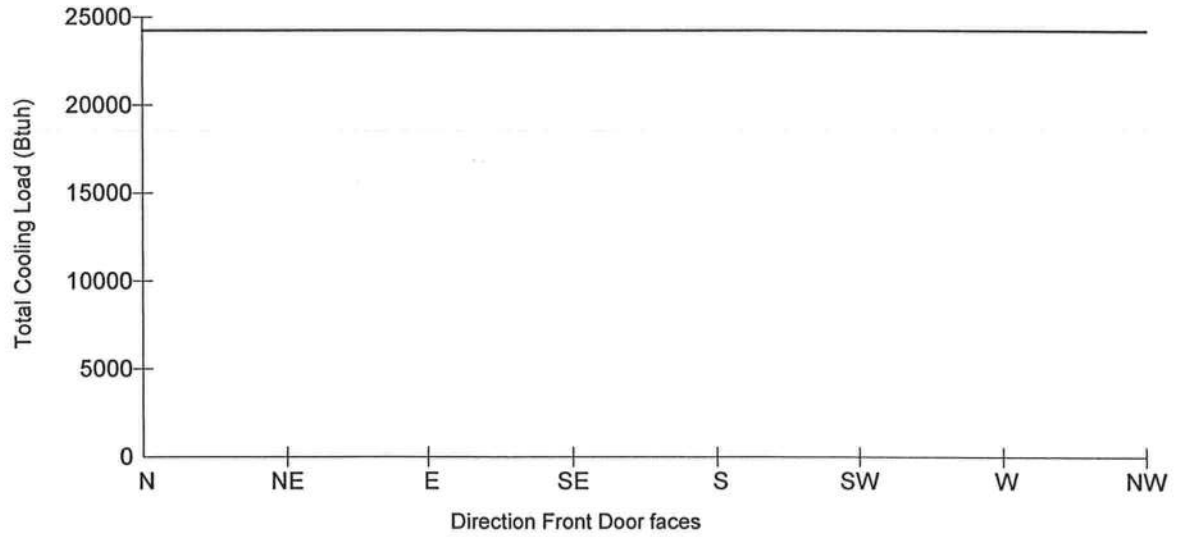
Outdoor:	Heating	Cooling
Dry bulb (°F)	33	92
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	77
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	37	17
Relative humidity (%)	30	50
Moisture difference (gr/lb)	10.6	52.0

Infiltration:

Front Door	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Sensible Load (Btuh)	20467	20467	20467	20467	20467	20467	20467	20467
Latent Load (Btuh)	3779	3779	3779	3779	3779	3779	3779	3779
Total Load (Btuh)	24246	24246	24246	24246	24246	24246	24246	24246
Heating AVF (cfm)	1127	1127	1127	1127	1127	1127	1127	1127
Cooling AVF (cfm)	1127	1127	1127	1127	1127	1127	1127	1127

Building Orientation Cooling Load



Current Orientation: Front Door faces East
Highest Cooling Load: Front Door faces North

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

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Building Analysis
Entire House
Dependable Heating and Air

Job: 13-025-01
Date: May 15, 2013
By: Ron Miller

Project Information

For: Smith Residence
530 SW Tiny Glenn, Lake City, FL 32024

Design Conditions

Location:
Gainesville, FL, US
Elevation: 151 ft
Latitude: 30°N

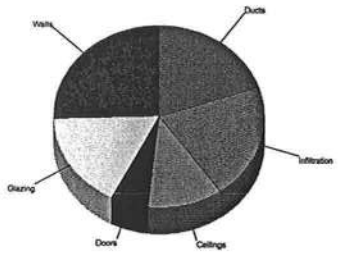
Outdoor:	Heating	Cooling
Dry bulb (°F)	33	92
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	77
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	37	17
Relative humidity (%)	30	50
Moisture difference (gr/lb)	10.6	52.0

Infiltration:	
Method	Simplified
Construction quality	Average
Fireplaces	0

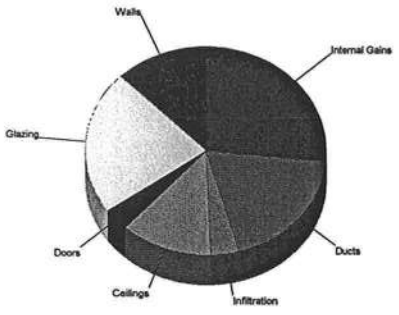
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	3.4	4057	25.6
Glazing	17.4	2678	16.9
Doors	22.2	932	5.9
Ceilings	1.2	1821	11.5
Floors	0	0	0
Infiltration	2.3	3264	20.6
Ducts		3117	19.6
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	
Total		**15870**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.2	2648	12.6
Glazing	30.6	4705	22.3
Doors	17.5	735	3.5
Ceilings	1.7	2591	12.3
Floors	0	0	0
Infiltration	0.6	789	3.7
Ducts		4022	19.1
Ventilation		0	0
Internal gains		5610	26.6
Blower		0	0
Adjustments		0	
Total		**21100**	**100.0**



Latent Cooling Load = 3779 Btuh
Overall U-value = 0.057 Btuh/ft²-°F

Data entries checked.

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Component Constructions
Entire House
Dependable Heating and Air

Job: 13-025-01
Date: May 15, 2013
By: Ron Miller

Project Information

For: Smith Residence
530 SW Tiny Glenn, Lake City, FL 32024

Design Conditions

Location:
Gainesville, FL, US
Elevation: 151 ft
Latitude: 30°N

Outdoor:	Heating	Cooling
Dry bulb (°F)	33	92
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	77
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	37	17
Relative humidity (%)	30	50
Moisture difference (gr/lb)	10.6	52.0

Infiltration:

Method	Simplified
Construction quality	Average
Fireplaces	0

Construction descriptions	Or	Area ft²	U-value Btuh/ft²-°F	Insul R ft²-°F/Btuh	Htg HTM Btuh/ft²	Loss Btuh	Clg HTM Btuh/ft²	Gain Btuh
Walls								
12C-0sw: Frm wall, vnl ext, 1/2" wood shth, r-13 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm	n	334	0.091	13.0	3.37	1125	2.20	734
	e	329	0.091	13.0	3.37	1108	2.20	723
	s	219	0.091	13.0	3.37	737	2.20	481
	w	323	0.091	13.0	3.37	1088	2.20	710
	all	1205	0.091	13.0	3.37	4057	2.20	2648
Partitions (none)								
Windows								
4A3-2ow: 2 glazing, clr low-e outr, argon gas, wd frm mat, clr innr, 1/4" gap, 1/8" thk	n	10	0.470	0	17.4	174	16.5	165
4A3-2ov: 2 glazing, clr low-e outr, argon gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk; 1 ft overhang (5 ft window ht, 1 ft sep.)	e	65	0.470	0	17.4	1130	47.3	3077
4A3-2ov: 2 glazing, clr low-e outr, argon gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.41); 1 ft overhang (5 ft window ht, 4 ft sep.)	s	29	0.470	0	17.4	504	18.5	536
4A3-2ov: 2 glazing, clr low-e outr, argon gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk; 10 ft overhang (5 ft window ht, 1 ft sep.)	w	46	0.470	0	17.4	800	16.5	760
4A3-2ov: 2 glazing, clr low-e outr, argon gas, vnl frm mat, clr innr, 1/4" gap, 1/8" thk; NFRC rated (SHGC=0.41); 50% drapes, loose/dark; 1 ft overhang (2 ft window ht, 1 ft sep.)	w	4	0.470	0	17.4	70	41.7	167
Doors								
11J0: Door, mtl fbrgl type	e	21	0.600	6.3	22.2	466	17.5	367
	w	21	0.600	6.3	22.2	466	17.5	367
	all	42	0.600	6.3	22.2	932	17.5	735
Ceilings								
16B-30ad: Attic ceiling, asphalt shingles roof mat, r-30 ceil ins, 1/2" gypsum board int fnsh		1538	0.032	30.0	1.18	1821	1.68	2591

Floors
(none)

wrightsoft

Project Summary
Entire House
Dependable Heating and Air

Job: 13-025-01
Date: May 15, 2013
By: Ron Miller

Project Information

For: Smith Residence
530 SW Tiny Glenn, Lake City, FL 32024

Notes:

Design Information

Weather: Gainesville, FL, US

Winter Design Conditions

Outside db	33 °F
Inside db	70 °F
Design TD	37 °F

Summer Design Conditions

Outside db	92 °F
Inside db	75 °F
Design TD	17 °F
Daily range	M
Relative humidity	50 %
Moisture difference	52 gr/lb

Heating Summary

Structure	12753 Btuh
Ducts	3117 Btuh
Central vent (0 cfm)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	15870 Btuh

Sensible Cooling Equipment Load Sizing

Structure	17078 Btuh
Ducts	4022 Btuh
Central vent (0 cfm)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	20467 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	1538	1538
Volume (ft³)	12731	12731
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	81	42

Latent Cooling Equipment Load Sizing

Structure	2892 Btuh
Ducts	887 Btuh
Central vent (0 cfm)	0 Btuh
Equipment latent load	3779 Btuh
Equipment total load	24246 Btuh
Req. total capacity at 0.70 SHR	2.4 ton

Heating Equipment Summary

Make	Goodman Mfg.
Trade	GOODMAN, JANITROL, AMANA DISTI...
Model	GSH130361B*
AHRI ref	4692017

Efficiency	7.7 HSPF
Heating input	
Heating output	31400 Btuh @ 47°F
Temperature rise	25 °F
Actual air flow	1127 cfm
Air flow factor	0.071 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	

Cooling Equipment Summary

Make	Goodman Mfg.
Trade	GOODMAN, JANITROL, AMANA DISTI...
Cond	GSH130361B*
Coil	AR*F374316B*
AHRI ref	4692017

Efficiency	11.0 EER, 13 SEER
Sensible cooling	23660 Btuh
Latent cooling	10140 Btuh
Total cooling	33800 Btuh
Actual air flow	1127 cfm
Air flow factor	0.053 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0.85

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

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AED Assessment
Entire House
Dependable Heating and Air

Job: 13-025-01
Date: May 15, 2013
By: Ron Miller

Project Information

For: Smith Residence
530 SW Tiny Glenn, Lake City, FL 32024

Design Conditions

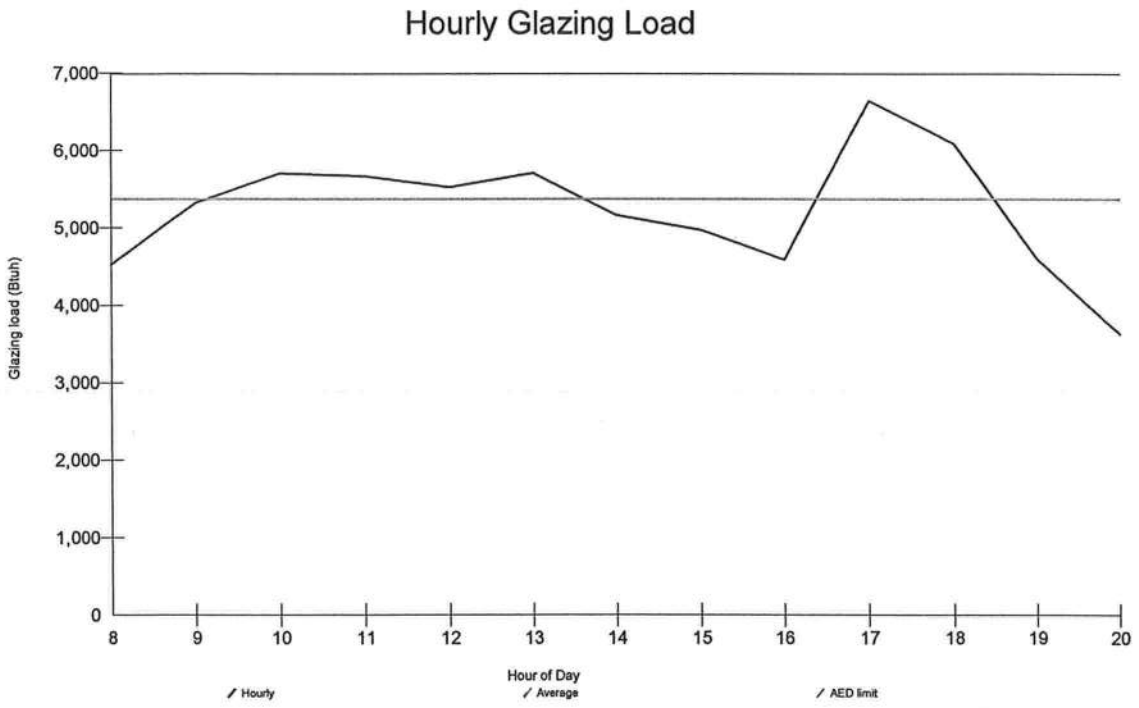
Location:
Gainesville, FL, US
Elevation: 151 ft
Latitude: 30°N

Outdoor:	Heating	Cooling
Dry bulb (°F)	33	92
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	77
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	37	17
Relative humidity (%)	30	50
Moisture difference (gr/lb)	10.6	52.0

Infiltration:

Test for Adequate Exposure Diversity



Maximum hourly glazing load exceeds average by 23.6%.

House has adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 0 Btuh

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Right-J® Worksheet
Entire House
Dependable Heating and Air

Job: 13-025-01
Date: May 15, 2013
By: Ron Miller

1	Room name						Entire House				Master Bedroom			
2	Exposed wall						161.6 ft				29.8 ft			
3	Room height						8.3 ft		d		8.0 ft		heat/cool	
4	Room dimensions										15.8 x 14.0 ft			
5	Room area						1538.1 ft²				221.2 ft²			
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.37	2.20	344	334	1125	734	0	0	0	0
.	G	4A3-2ow	0.470	n	17.39	16.52	10	0	174	165	0	0	0	0
.	W	12C-0sw	0.091	e	3.37	2.20	415	329	1108	723	112	92	310	202
.	G	4A3-2ov	0.470	e	17.39	47.34	65	0	1130	3077	20	0	348	947
11	D	11J0	0.600	e	22.20	17.49	21	21	466	367	0	0	0	0
	W	12C-0sw	0.091	s	3.37	2.20	248	219	737	481	127	107	360	235
	G	4A3-2ov	0.470	s	17.39	18.47	29	16	504	536	20	6	348	369
	G	4A3-2ov	0.470	s	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.37	2.20	394	323	1088	710	0	0	0	0
	G	4A3-2ov	0.470	w	17.39	16.52	46	92	800	760	0	0	0	0
	G	4A3-2ov	0.470	w	17.39	41.69	4	0	70	167	0	0	0	0
	D	11J0	0.600	w	22.20	17.49	21	21	466	367	0	0	0	0
	C	16B-30ad	0.032	-	1.18	1.68	1538	1538	1821	2591	221	221	262	373
	F	22A-tpl	0.989	-	0.00	0.00	1538	0	0	0	221	0	0	0
6	c) AED excursion									0				-317
	Envelope loss/gain								9489	10679			1628	1809
12	a) Infiltration								3264	789			557	135
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @ 230					7			1610	2			460
		Appliances/other								4000				500
	Subtotal (lines 6 to 13)								12753	17078			2184	2903
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								12753	17078			2184	2903
15	Duct loads						24%	24%	3117	4022	24%	24%	534	684
	Total room load								15870	21100			2718	3587
	Air required (cfm)								1127	1127			193	192

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

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Right-J® Worksheet
Entire House
Dependable Heating and Air

Job: 13-025-01
Date: May 15, 2013
By: Ron Miller

1	Room name						Master Bath/CL				Great Room			
2	Exposed wall							27.2 ft				18.0 ft		
3	Room height						8.0 ft		heat/cool		9.5 ft		heat/cool	
4	Room dimensions							14.2 x 13.0 ft				18.0 x 15.8 ft		
5	Room area						184.6 ft²				284.4 ft²			
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.37	2.20	0	0	0	0	0	0	0	0
.	G	4A3-2ow	0.470	n	17.39	16.52	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	e	3.37	2.20	0	0	0	0	144	93	313	204
.	G	4A3-2ov	0.470	e	17.39	47.34	0	0	0	0	30	0	522	1420
11	D	11J0	0.600	e	22.20	17.49	0	0	0	0	21	21	466	367
	W	12C-0sw	0.091	s	3.37	2.20	121	112	377	246	0	0	0	0
	G	4A3-2ov	0.470	s	17.39	18.47	9	3	157	166	0	0	0	0
	G	4A3-2ov	0.470	s	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.37	2.20	104	100	337	220	0	0	0	0
	G	4A3-2ov	0.470	w	17.39	16.52	0	0	0	0	0	0	0	0
	G	4A3-2ov	0.470	w	17.39	41.69	4	0	70	167	0	0	0	0
	D	11J0	0.600	w	22.20	17.49	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	1.18	1.68	185	185	219	311	284	284	337	479
	F	22A-tpl	0.989	-	0.00	0.00	185	0	0	0	284	0	0	0
6	c) AED excursion									-72				-211
	Envelope loss/gain								1158	1038			1638	2260
12	a) Infiltration								524	127			335	81
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @ 230					0			0	2			460
		Appliances/other								0				1000
	Subtotal (lines 6 to 13)								1683	1165			1973	3801
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1683	1165			1973	3801
15	Duct loads						24%	24%	411	274	24%	24%	482	895
	Total room load								2094	1439			2456	4696
	Air required (cfm)								149	77			174	251

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

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Right-J® Worksheet
Entire House
Dependable Heating and Air

Job: 13-025-01
Date: May 15, 2013
By: Ron Miller

1	Room name						Kitchen/Dining				Guest Bath			
2	Exposed wall						18.5 ft				7.8 ft			
3	Room height						8.0 ft		heat/cool		8.0 ft		heat/cool	
4	Room dimensions						18.5 x 15.2 ft				7.8 x 13.0 ft			
5	Room area						281.2 ft²				101.4 ft²			
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.37	2.20	0	0	0	0	104	104	350	229
.	G	4A3-2ow	0.470	n	17.39	16.52	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	e	3.37	2.20	0	0	0	0	63	63	212	138
.	G	4A3-2ov	0.470	e	17.39	47.34	0	0	0	0	0	0	0	0
11	D	11J0	0.600	e	22.20	17.49	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.37	2.20	0	0	0	0	0	0	0	0
	G	4A3-2ov	0.470	s	17.39	18.47	0	0	0	0	0	0	0	0
	G	4A3-2ov	0.470	s	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.37	2.20	144	113	380	248	0	0	0	0
	G	4A3-2ov	0.470	w	17.39	16.52	31	31	539	512	0	0	0	0
	G	4A3-2ov	0.470	w	17.39	41.69	0	0	0	0	0	0	0	0
	D	11J0	0.600	w	22.20	17.49	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	1.18	1.68	281	281	333	474	101	101	120	171
	F	22A-tpl	0.989	-	0.00	0.00	281	0	0	0	101	0	0	0
6	c) AED excursion									687				-62
	Envelope loss/gain								1253	1921			682	476
12	a) Infiltration								335	81			389	94
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @ 230					1			230	0			0
		Appliances/other								1000				0
	Subtotal (lines 6 to 13)								1588	3232			1071	570
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1588	3232			1071	570
15	Duct loads						24%	24%	388	761	24%	24%	262	134
	Total room load								1976	3993			1333	704
	Air required (cfm)								140	213			95	38

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

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Right-J® Worksheet
Entire House
Dependable Heating and Air

Job: 13-025-01
Date: May 15, 2013
By: Ron Miller

1	Room name						Bedroom 2				Hall Closet				
2	Exposed wall						25.0 ft				4.0 ft				
3	Room height						8.0 ft		heat/cool		8.0 ft		heat/cool		
4	Room dimensions						13.0 x 12.0 ft				4.0 x 5.0 ft				
5	Room area						156.0 ft²				20.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	n	3.37	2.20	104	104	350	229	32	32	108	70	
.	└G	4A3-2ow	0.470	n	17.39	16.52	0	0	0	0	0	0	0	0	
.	W	12C-0sw	0.091	e	3.37	2.20	96	81	273	178	0	0	0	0	
.	└G	4A3-2ov	0.470	e	17.39	47.34	15	0	261	710	0	0	0	0	
11	└D	11J0	0.600	e	22.20	17.49	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	s	3.37	2.20	0	0	0	0	0	0	0	0	
	└G	4A3-2ov	0.470	s	17.39	18.47	0	0	0	0	0	0	0	0	
	└G	4A3-2ov	0.470	s	0.00	0.00	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	w	3.37	2.20	0	0	0	0	0	0	0	0	
	└G	4A3-2ov	0.470	w	17.39	16.52	0	0	0	0	0	0	0	0	
	└G	4A3-2ov	0.470	w	17.39	41.69	0	0	0	0	0	0	0	0	
	└D	11J0	0.600	w	22.20	17.49	0	0	0	0	0	0	0	0	
	C	16B-30ad	0.032	-	1.18	1.68	156	156	185	263	20	20	24	34	
	F	22A-tpl	0.989	-	0.00	0.00	156	0	0	0	20	0	0	0	
6	c) AED excursion									-127				-12	
	Envelope loss/gain								1068	1253			131	92	
12	a) Infiltration								466	113			75	18	
	b) Room ventilation								0	0			0	0	
13	Internal gains:	Occupants @ 230					1			230	0			0	
		Appliances/other								500				0	
	Subtotal (lines 6 to 13)								1534	2095			206	110	
	Less external load								0	0			0	0	
	Less transfer								0	0			0	0	
	Redistribution								0	0			0	0	
14	Subtotal								1534	2095			206	110	
15	Duct loads						24%	24%	375	493	24%	24%	50	26	
	Total room load								1909	2589			256	136	
	Air required (cfm)								136	138			18	7	

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

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Right-J® Worksheet
Entire House
Dependable Heating and Air

Job: 13-025-01
Date: May 15, 2013
By: Ron Miller

1	Room name						Bedroom 3				Utility			
2	Exposed wall						25.0 ft				6.3 ft			
3	Room height						8.0 ft		heat/cool		8.0 ft		heat/cool	
4	Room dimensions						13.0	x 12.0 ft			6.3	x 13.0 ft		
5	Room area						156.0 ft²				81.3 ft²			
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.37	2.20	104	94	316	207	0	0	0	0
.	G	4A3-2ow	0.470	n	17.39	16.52	10	0	174	165	0	0	0	0
.	W	12C-0sw	0.091	e	3.37	2.20	0	0	0	0	0	0	0	0
.	G	4A3-2ov	0.470	e	17.39	47.34	0	0	0	0	0	0	0	0
11	D	11J0	0.600	e	22.20	17.49	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.37	2.20	0	0	0	0	0	0	0	0
	G	4A3-2ov	0.470	s	17.39	18.47	0	0	0	0	0	0	0	0
	G	4A3-2ov	0.470	s	0.00	0.00	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.37	2.20	96	81	273	178	50	29	98	64
	G	4A3-2ov	0.470	w	17.39	16.52	15	15	261	248	0	0	0	0
	G	4A3-2ov	0.470	w	17.39	41.69	0	0	0	0	0	0	0	0
	D	11J0	0.600	w	22.20	17.49	0	0	0	0	21	21	466	367
	C	16B-30ad	0.032	-	1.18	1.68	156	156	185	263	81	81	96	137
	F	22A-tpl	0.989	-	0.00	0.00	156	0	0	0	81	0	0	0
6	c) AED excursion									232				-108
	Envelope loss/gain								1209	1292			660	460
12	a) Infiltration								466	113			116	28
	b) Room ventilation								0	0			0	0
13	Internal gains:	Occupants @ 230					1			230	0			0
		Appliances/other								500				500
	Subtotal (lines 6 to 13)								1675	2135			777	988
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								1675	2135			777	988
15	Duct loads						24%	24%	409	503	24%	24%	190	233
	Total room load								2084	2637			966	1221
	Air required (cfm)								148	141			69	65

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.

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Right-J® Worksheet
Entire House
Dependable Heating and Air

Job: 13-025-01
Date: May 15, 2013
By: Ron Miller

1	Room name						Hallway								
2	Exposed wall						0 ft								
3	Room height						8.0 ft				heat/cool				
4	Room dimensions						13.0 x 4.0 ft								
5	Room area						52.0 ft²								
	Ty	Construction number	U-value (Btuh/ft²-°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area or perimeter		Load	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.37	2.20	0	0	0	0				
.	└G	4A3-2ow	0.470	n	17.39	16.52	0	0	0	0				
.	W	12C-0sw	0.091	e	3.37	2.20	0	0	0	0				
.	├G	4A3-2ov	0.470	e	17.39	47.34	0	0	0	0				
11	└D	11J0	0.600	e	22.20	17.49	0	0	0	0				
	W	12C-0sw	0.091	s	3.37	2.20	0	0	0	0				
	├G	4A3-2ov	0.470	s	17.39	18.47	0	0	0	0				
	├G	4A3-2ov	0.470	s	0.00	0.00	0	0	0	0				
	W	12C-0sw	0.091	w	3.37	2.20	0	0	0	0				
	├G	4A3-2ov	0.470	w	17.39	16.52	0	0	0	0				
	├G	4A3-2ov	0.470	w	17.39	41.69	0	0	0	0				
	└D	11J0	0.600	w	22.20	17.49	0	0	0	0				
	C	16B-30ad	0.032	-	1.18	1.68	52	52	62	88				
	F	22A-tpl	0.989	-	0.00	0.00	52	0	0	0				
6	c) AED excursion									-9				
	Envelope loss/gain								62	79				
12	a) Infiltration								0	0				
	b) Room ventilation								0	0				
13	Internal gains:	Occupants @ 230					0			0				
		Appliances/other								0				
	Subtotal (lines 6 to 13)								62	79				
	Less external load								0	0				
	Less transfer								0	0				
	Redistribution								0	0				
14	Subtotal								62	79				
15	Duct loads						24%	24%	15	19				
	Total room load								77	98				
	Air required (cfm)								5	5				

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.