

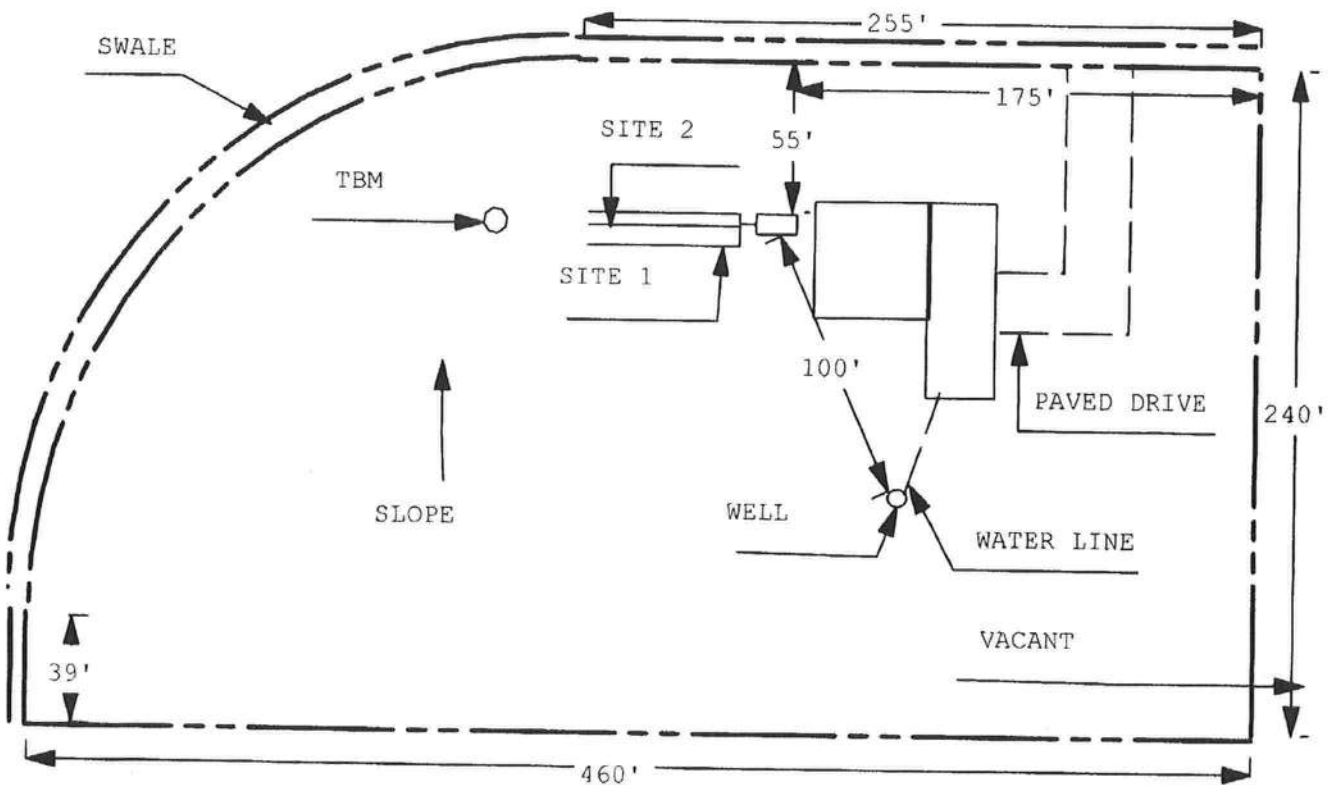
Application for Onsite Sewage Disposal System
Construction Permit. Part II Site Plan
Permit Application Number: 12-0517

ALL CHANGES MUST BE APPROVED BY THE COUNTY HEALTH UNIT

OCCUPIED >75' TO WELL

CR# 10-5541

NORTH



Herder-Ward

OCCUPIED >75' TO WELL

1 inch = 65 feet

Site Plan Submitted By Paul D. [Signature] Date 11/2/12
Plan Approved X Not Approved Date 12-10-12

By Sallie Ford Env Health Director Columbia CHD CPHU

Notes: _____

Residential System Sizing Calculation

Summary

Ward

Project Title:
Ward - Main House

Lake City, FL 32055-

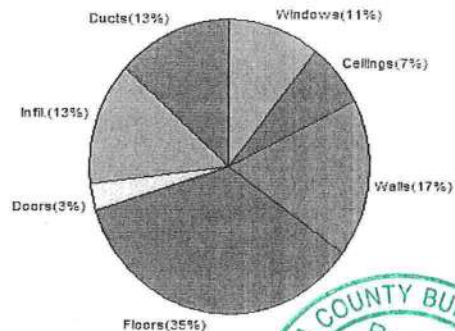
10/25/2012

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(54gr.)			
Winter design temperature(MJ8 99%)	33 F	Summer design temperature(MJ8 99%)	92 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	37 F	Summer temperature difference	17 F
Total heating load calculation		Total cooling load calculation	
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	103.9 35000	Sensible (SHR = 0.75)	126.4 26250
Heat Pump + Auxiliary(0.0kW)	103.9 35000	Latent	186.1 8750
		Total (Electric Heat Pump)	137.5 35000

WINTER CALCULATIONS

Winter Heating Load (for 2006 sqft)

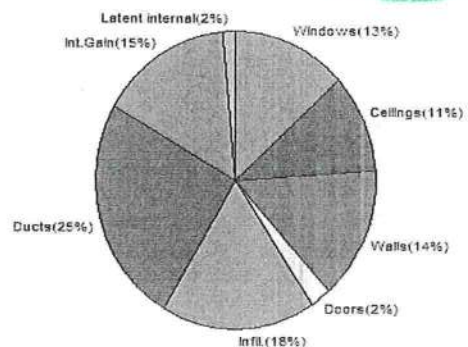
Load component		Load	
Window total	178 sqft	3618	Btuh
Wall total	1767 sqft	5803	Btuh
Door total	60 sqft	1021	Btuh
Ceiling total	2006 sqft	2364	Btuh
Floor total	2006 sqft	11876	Btuh
Infiltration	111 cfm	4505	Btuh
Duct loss		4503	Btuh
Subtotal		33689	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		33689	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 2006 sqft)

Load component		Load	
Window total	178 sqft	3380	Btuh
Wall total	1767 sqft	3686	Btuh
Door total	60 sqft	554	Btuh
Ceiling total	2006 sqft	2683	Btuh
Floor total		0	Btuh
Infiltration	83 cfm	1552	Btuh
Internal gain		3860	Btuh
Duct gain		5045	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		20761	Btuh
Latent gain(ducts)		1255	Btuh
Latent gain(infiltration)		3048	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		400	Btuh
Total latent gain		4703	Btuh
TOTAL HEAT GAIN		25464	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: *[Signature]*

DATE: *10/26/12*

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Ward

Lake City, FL 32055-

Project Title:
Ward - Main House
Building Type: User

10/25/2012

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 37.0 F (MJ8 99%)

Component Loads for Whole House							
Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	Load
1	2, NFRC 0.50	Vinyl	0.55	S	9.8	20.4	199 Btuh
2	2, NFRC 0.50	Vinyl	0.55	S	15.6	20.4	317 Btuh
3	2, NFRC 0.50	Vinyl	0.55	E	4.4	20.4	90 Btuh
4	2, NFRC 0.50	Vinyl	0.55	S	9.8	20.4	199 Btuh
5	2, NFRC 0.50	Vinyl	0.55	W	15.6	20.4	317 Btuh
6	2, NFRC 0.50	Vinyl	0.55	W	24.9	20.4	506 Btuh
7	2, NFRC 0.50	Vinyl	0.55	W	2.2	20.4	45 Btuh
8	2, NFRC 0.50	Vinyl	0.55	N	49.8	20.4	1013 Btuh
9	2, NFRC 0.50	Vinyl	0.55	N	14.2	20.4	289 Btuh
10	2, NFRC 0.50	Vinyl	0.55	N	24.9	20.4	506 Btuh
11	2, NFRC 0.50	Vinyl	0.55	E	2.2	20.4	45 Btuh
12	2, NFRC 0.50	Vinyl	0.55	S	4.4	20.4	90 Btuh
Window Total					177.8(sqft)		3618 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	92	3.28	301 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	110	3.28	363 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	108	3.28	355 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	175	3.28	574 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	328	3.28	1077 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	315	3.28	1034 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	210	3.28	689 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	197	3.28	648 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	232	3.28	762 Btuh
Wall Total					1767(sqft)		5803 Btuh
Doors	Type	Storm	Ueff.		Area	X	Load
1	Insulated - Exterior, m		(0.460)		20	17.0	340 Btuh
2	Insulated - Exterior, m		(0.460)		20	17.0	340 Btuh
3	Insulated - Exterior, m		(0.460)		20	17.0	340 Btuh
Door Total					60(sqft)		1021 Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	Load
1	Vented Attic/L/Shing		(0.032)	30.0/0.0	2006	1.2	2364 Btuh
Ceiling Total					2006(sqft)		2364 Btuh
Floors	Type		Ueff.	R-Value	Size	X	Load
1	Slab On Grade		(1.180)	0.0	272.0 ft(perim.)	43.7	11876 Btuh
Floor Total					2006 sqft		11876 Btuh
Envelope Subtotal:							24681 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural		0.37	18054	1.00	111.2	4505 Btuh

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Manual J Winter Calculations

Residential Load - Component Details (continued)

Ward

Lake City, FL 32055-

Project Title:
Ward - Main House
Building Type: User

10/25/2012

Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.154)	4503 Btuh
All Zones	Sensible Subtotal All Zones	33689 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	33689 Btuh 0 Btuh 33689 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	35000 Btuh
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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

Ward

Project Title:
Ward - Main House

Lake City, FL 32055-

10/25/2012

Reference City: Gainesville, FL

Temperature Difference: 17.0F(MJ8 99%)

Humidity difference: 54gr.

Component Loads for Whole House

Window	Type*						Overhang		Window Area(sqft)			HTM		Load	
	Panes	SHGC	U	InSh	IS	Omt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded		
1	2 NFRC	0.50, 0.55	B-L	No	S		2.0ft.	0.3ft.	9.8	9.8	0.0	13	16	129	Btuh
2	2 NFRC	0.50, 0.55	B-L	No	S		12.0f	0.3ft.	15.6	15.6	0.0	13	16	205	Btuh
3	2 NFRC	0.50, 0.55	B-L	No	E		2.0ft.	0.3ft.	4.4	2.2	2.2	13	34	104	Btuh
4	2 NFRC	0.50, 0.55	B-L	No	S		2.0ft.	0.3ft.	9.8	9.8	0.0	13	16	129	Btuh
5	2 NFRC	0.50, 0.55	B-L	No	W		2.0ft.	0.3ft.	15.6	4.4	11.1	13	34	433	Btuh
6	2 NFRC	0.50, 0.55	B-L	No	W		2.0ft.	0.3ft.	24.9	7.1	17.8	13	34	693	Btuh
7	2 NFRC	0.50, 0.55	B-L	No	W		2.0ft.	0.3ft.	2.2	2.2	0.0	13	34	29	Btuh
8	2 NFRC	0.50, 0.55	B-L	No	N		8.0ft.	0.3ft.	49.8	0.0	49.8	13	13	655	Btuh
9	2 NFRC	0.50, 0.55	B-L	No	N		2.0ft.	0.3ft.	14.2	0.0	14.2	13	13	187	Btuh
10	2 NFRC	0.50, 0.55	B-L	No	N		2.0ft.	0.3ft.	24.9	0.0	24.9	13	13	327	Btuh
11	2 NFRC	0.50, 0.55	B-L	No	E		2.0ft.	0.3ft.	2.2	2.2	0.0	13	34	29	Btuh
12	2 NFRC	0.50, 0.55	B-L	No	S		2.0ft.	0.3ft.	4.4	4.4	0.0	13	16	58	Btuh
	Excursion													401	Btuh
	Window Total								178 (sqft)					3380 Btuh	
Walls	Type	U-Value				R-Value		Area(sqft)			HTM		Load		
						Cav/Sheath									
1	Frame - Wood - Ext	0.09				13.0/0.0		91.8			2.1		191 Btuh		
2	Frame - Wood - Ext	0.09				13.0/0.0		110.4			2.1		230 Btuh		
3	Frame - Wood - Ext	0.09				13.0/0.0		108.1			2.1		225 Btuh		
4	Frame - Wood - Ext	0.09				13.0/0.0		174.7			2.1		364 Btuh		
5	Frame - Wood - Ext	0.09				13.0/0.0		327.8			2.1		684 Btuh		
6	Frame - Wood - Ext	0.09				13.0/0.0		315.0			2.1		657 Btuh		
7	Frame - Wood - Ext	0.09				13.0/0.0		209.9			2.1		438 Btuh		
8	Frame - Wood - Ext	0.09				13.0/0.0		197.3			2.1		411 Btuh		
9	Frame - Wood - Ext	0.09				13.0/0.0		232.0			2.1		484 Btuh		
	Wall Total								1767 (sqft)					3686 Btuh	
Doors	Type							Area (sqft)			HTM		Load		
1	Insulated - Exterior							20.0			9.2		185 Btuh		
2	Insulated - Exterior							20.0			9.2		185 Btuh		
3	Insulated - Exterior							20.0			9.2		185 Btuh		
	Door Total								60 (sqft)					554 Btuh	
Ceilings	Type/Color/Surface	U-Value				R-Value		Area(sqft)			HTM		Load		
1	Vented Attic/Light/Shingle	0.032				30.0/0.0		2006.0			1.34		2683 Btuh		
	Ceiling Total								2006 (sqft)					2683 Btuh	
Floors	Type					R-Value		Size			HTM		Load		
1	Slab On Grade					0.0		2006 (ft-perimeter)			0.0		0 Btuh		
	Floor Total								2006.0 (sqft)					0 Btuh	
	Envelope Subtotal:													10303 Btuh	

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Manual J Summer Calculations

Residential Load - Component Details (continued)

Ward

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Ward - Main House

Lake City, FL 32055-

10/25/2012

Infiltration	Type Natural	Average ACH 0.28	Volume(cuft) 18054	Wall Ratio 1	CFM= 83.4	Load 1552 Btuh
Internal gain		Occupants 2	Btuh/occupant X 230	Appliance +	3400	Load 3860 Btuh
					Sensible Envelope Load:	15716 Btuh
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic)				(DGM of 0.321)	5045 Btuh
					Sensible Load All Zones	20761 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Ward

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Ward - Main House

Lake City, FL 32055-

10/25/2012

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	15716 Btuh
	Sensible Duct Load	5045 Btuh
	Total Sensible Zone Loads	20761 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	20761 Btuh
	Latent infiltration gain (for 54 gr. humidity difference)	3048 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1255 Btuh
	Latent occupant gain (2.0 people @ 200 Btuh per person)	400 Btuh
	Latent other gain	0 Btuh
	Latent total gain	4703 Btuh
	TOTAL GAIN	25464 Btuh

EQUIPMENT

1. Central Unit	#	35000 Btuh
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*Key: Window types (Panels - 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