

# TITLE 24 REPORT

## **Title 24 Report for:**

City of Fort Bragg 2nd dwelling 768 sq. ft. units

Fort Bragg, CA 95437

## **Project Designer:**

Jerry Dorsey Drafting  
249 North Main Street  
Fort Bragg, CA 95437

## **Report Prepared By:**

Joe Bainbridge  
Joe Brainbridge Drafting  
210 N. Corry Street, Suite B  
Fort Bragg, CA 95437  
(707) 964-4926

## **Job Number:**

## **Date:**

4/20/2009

The EnergyPro computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2005 Building Energy Efficiency Standards.

This program developed by EnergySoft, LLC - [www.energysoft.com](http://www.energysoft.com).

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# Certificate Of Compliance : Residential

(Part 1 of 4) **CF-1R**

City of Fort Bragg 2nd dwelling 768 sq. ft. units  
Project Title

4/20/2009  
Date

Fort Bragg  
Project Address

Joe Brainbridge Drafting  
Documentation Author

(707) 964-4926  
Telephone

EnergyPro  
Compliance Method

CA Climate Zone 01  
Climate Zone

Building Permit #

Plan Check/Date

Field Check/Date

TDV (kBtu/sf-yr)	Standard Design	Facing North Margin	Facing East Margin	Facing South Margin	Facing West Margin
Space Heating	54.10	45.00 9.10	44.99 9.11	45.39 8.71	46.62 7.47
Space Cooling	2.17	0.90 1.27	1.14 1.03	1.10 1.06	0.65 1.52
Fans	1.43	1.36 0.07	1.40 0.04	1.40 0.03	1.36 0.07
Domestic Hot Water	50.96	28.07 22.89	28.07 22.89	28.07 22.89	28.07 22.89
Pumps	0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
<b>Totals</b>	<b>108.65</b>	<b>75.32 33.33</b>	<b>75.60 33.06</b>	<b>75.97 32.69</b>	<b>76.70 31.95</b>
<b>Percent better than Standard:</b>		<b>30.7%</b>	<b>30.4%</b>	<b>30.1%</b>	<b>29.4%</b>

## BUILDING COMPLIES - NO HERS VERIFICATION REQUIRED

<b>Building Type:</b>	<input checked="" type="checkbox"/> Single Family	<input type="checkbox"/> Addition	<b>Total Conditioned Floor Area:</b>	612 ft <sup>2</sup>	
	<input type="checkbox"/> Multi Family	<input type="checkbox"/> Existing + Add/Alt	<b>Existing Floor Area:</b>	n/a ft <sup>2</sup>	
<b>Building Front Orientation:</b>	All Four Orientations		<b>Raised Floor Area:</b>	768 ft <sup>2</sup>	
<b>Fuel Type:</b>	Propane		<b>Slab on Grade Area:</b>	0 ft <sup>2</sup>	
<b>Fenestration:</b>			<b>Average Ceiling Height:</b>	10.0 ft	
Area:	185 ft <sup>2</sup>	Avg. U:	0.39	<b>Number of Dwelling Units:</b>	1.00
Ratio:	30.2%	Avg. SHGC:	0.37	<b>Number of Stories:</b>	1

### BUILDING ZONE INFORMATION

Zone Name	Floor Area	Volume	# of Units	Zone Type	Thermostat Type	Vent Hgt.	Vent Area
HVAC System	612	6,120	1.00	Conditioned	Setback	2	n/a

### OPAQUE SURFACES

Type	Frame	Area	U-Fac.	Insulation Cav.	Act. Cont.	Azm.	Tilt	Gains Y/N	JA IV Reference	Location / Comments
Roof	Wood	416	0.036	R-30	R-0.0	180	24	X	New 02-A9	1st Floor
Floor	Wood	768	0.037	R-19	R-0.0	0	180	X	New 20-A4	1st Floor
Wall	Wood	238	0.074	R-19	R-0.0	90	90	X	New 09-A5	1st Floor
Door	None	20	0.500	None	R-0.0	90	90	X	New 28-A4	1st Floor
Wall	Wood	166	0.074	R-19	R-0.0	180	90	X	New 09-A5	1st Floor
Wall	Wood	248	0.074	R-19	R-0.0	270	90	X	New 09-A5	1st Floor
Door	None	17	0.500	None	R-0.0	270	90	X	New 28-A4	1st Floor
Wall	Wood	214	0.074	R-19	R-0.0	0	90	X	New 09-A5	1st Floor
Roof	Wood	396	0.036	R-30	R-0.0	0	24	X	New 02-A9	1st Floor



# Certificate Of Compliance : Residential

(Part 3 of 4) **CF-1R**

City of Fort Bragg 2nd dwelling 768 sq. ft. units  
Project Title

4/20/2009  
Date

## HVAC SYSTEMS

Location	Heating Type	Minimum Eff	Cooling Type	Minimum Eff	Condition Status	Thermostat Type
HVAC System	Gravity Wall Furnace	83% AFUE	No Cooling	13.0 SEER	New	Setback

## HVAC DISTRIBUTION

Location	Heating	Cooling	Duct Location	Duct R-Value	Condition Status	Ducts Tested?
HVAC System	Ductless / No Fan	Ductless	n/a	n/a	New	Yes

Hydronic Piping System Name	Pipe Length	Pipe Diameter	Insul. Thick.

## WATER HEATING SYSTEMS

System Name	Water Heater Type	Distribution	# in Syst.	Rated Input (Btu/hr)	Tank Cap. (gal)	Condition Status	Energy Factor or RE	Standby Loss (%)	Tank Insul. R-Value Ext.
on demand	Instant Gas	No Pipe Insulation	1	177,000	0	New	0.85	0	n/a

## Multi-Family Central Water Heating Details Hot Water Pump

Control	#	HP	Type	Hot Water Piping Length (ft) In Plenum	Outside	Buried	Add 1/2" Insulation

## REMARKS

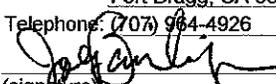
## COMPLIANCE STATEMENT

This certificate of compliance lists the building features and specifications needed to comply with Title 24, Parts 1 and 6 of the California Code of Regulations, and the administrative regulations to implement them. This certificate has been signed by the individual with overall design responsibility. The undersigned recognizes that compliance using duct design, duct sealing, verification of refrigerant charge and TXVs, insulation installation quality, and building envelope sealing require installer testing and certification and field verification by an approved HERS rater.

### Designer or Owner (per Business & Professions Code)

Name: \_\_\_\_\_  
 Title/Firm: Jerry Dorsey Drafting  
 Address: 249 North Main Street  
Fort Bragg, CA 95437  
 Telephone: \_\_\_\_\_ Lic. #: \_\_\_\_\_  
 (signature) \_\_\_\_\_ (date)

### Documentation Author

Name: Joe Bainbridge  
 Title/Firm: Joe Brainbridge Drafting  
 Address: 210 N. Corry Street, Suite B  
Fort Bragg, CA 95437  
 Telephone: (707) 964-4926  
 (signature)  (date) 4.20.2009

### Enforcement Agency

Name: \_\_\_\_\_  
 Title/Firm: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Telephone: \_\_\_\_\_  
 (signature) \_\_\_\_\_ (date)



# Mandatory Measures Summary: Residential (Page 1 of 2) MF-1R

**NOTE:** Lowrise residential buildings subject to the Standards must contain these measures regardless of the compliance approach used. More stringent compliance requirements from the Certificate of Compliance supercede the items marked with an asterisk (\*) below. When this checklist is incorporated into the permit documents, the features noted shall be considered by all parties as minimum component performance specifications for the mandatory measures whether they are shown elsewhere in the documents or on this checklist only.

DESCRIPTION	Check or initial applicable boxes or check NA if not applicable and included with the permit application documentation.			ENFORCE- MENT
	N/A	DESIGNER		
<b>Building Envelope Measures</b>				
* § 150(a): Minimum R-19 in wood ceiling insulation or equivalent U-factor in metal frame ceiling.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
§ 150(b): Loose fill insulation manufacturer's labeled R-Value: _____.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
* § 150(c): Minimum R-13 wall insulation in wood framed walls or equivalent U-factor in metal frame walls (does not apply to exterior mass walls).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
* § 150(d): Minimum R-13 raised floor insulation in framed floors or equivalent U-factor.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
§ 150(e): Installation of Fireplaces, Decorative Gas Appliances and Gas Logs.				
1. Masonry and factory-built fireplaces have:				
a. closable metal or glass door covering the entire opening of the firebox	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. outside air intake with damper and control, flue damper and control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. No continuous burning gas pilot lights allowed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
§ 150(f): Air retarding wrap installed to comply with §151 meets requirements specified in the ACM Residential Manual.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
§ 150(g): Vapor barriers mandatory in Climate Zones 14 and 16 only.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
§ 150(f): Slab edge insulation - water absorption rate for the insulation alone without facings no greater than 0.3%, water vapor permeance rate no greater than 2.0 perm/inch.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
§ 118: Insulation specified or installed meets insulation installation quality standards. Indicate type and include CF-6R Form: _____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
§ 116-17: Fenestration Products, Exterior Doors, and Infiltration/Exfiltration Controls.				
1. Doors and windows between conditioned and unconditioned spaces designed to limit air leakage.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Fenestration products (except field fabricated) have label with certified U-Factor, certified Solar Heat Gain Coefficient (SHGC), and infiltration certification.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Exterior doors and windows weatherstripped; all joints and penetrations caulked and sealed.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>Space Conditioning, Water Heating and Plumbing System Measures</b>				
§ 110-13: HVAC equipment, water heaters, showerheads and faucets certified by the Energy Commission.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
§ 150(h): Heating and/or cooling loads calculated in accordance with ASHRAE, SMACNA or ACCA.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
§ 150(i): Setback thermostat on all applicable heating and/or cooling systems.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
§ 150(j): Water system pipe and tank insulation and cooling systems line insulation.				
1. Storage gas water heaters rated with an Energy Factor less than 0.58 must be externally wrapped with insulation having an installed thermal resistance of R-12 or greater.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Back-up tanks for solar systems, unfired storage tanks, or other indirect hot water tanks have R-12 external insulation or R-16 internal insulation and indicated on the exterior of the tank showing the R-value.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. The following piping is insulated according to Table 150-A/B or Equation 150-A Insulation Thickness:				
1. First 5 feet of hot and cold water pipes closest to water heater tank, non-recirculating systems, and entire length of recirculating sections of hot water pipes shall be insulated to Table 150B.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Cooling system piping (suction, chilled water, or brine lines), piping insulated between heating source and indirect hot water tank shall be insulated to Table 150-B and Equation 150-A.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Steam hydronic heating systems or hot water systems > 15 psi, meet requirements of Table 123-A.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Insulation must be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Insulation for chilled water piping and refrigerant suction piping includes a vapor retardant or is enclosed entirely in conditioned space.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Solar water-heating systems/collectors are certified by the Solar Rating and Certification Corporation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

# Mandatory Measures Summary: Residential (Page 2 of 2) MF-1R

**NOTE:** Lowrise residential buildings subject to the Standards must contain these measures regardless of the compliance approach used. More stringent compliance requirements from the Certificate of Compliance supercede the items marked with an asterisk (\*) below. When this checklist is incorporated into the permit documents, the features noted shall be considered by all parties as minimum component performance specifications for the mandatory measures whether they are shown elsewhere in the documents or on this checklist only.

DESCRIPTION	Instructions: Check or initial applicable boxes when completed or check N/A if not applicable.			ENFORCE-
	N/A	DESIGNER	MENT	
<b>Space Conditioning, Water Heating and Plumbing System Measures: (continued)</b>				
§ 150(m): Ducts and Fans				
1. All ducts and plenums installed, sealed and insulated to meet the requirements of the CMC Sections 601, 602, 603, 604, 605, and Standard 6-5; supply-air and return-air ducts and plenums are insulated to a minimum installed level of R-4.2 or enclosed entirely in conditioned space. Openings shall be sealed with mastic, tape or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than 1/4 inch, the combination of mastic and either mesh or tape shall be used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Building cavities, support platforms for air handlers, and plenums defined or constructed with materials other than sealed sheet metal, duct board or flexible duct shall not be used for conveying conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms shall not be compressed to cause reductions in the cross-sectional area of the ducts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Joints and seams of duct systems and their components shall not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Exhaust fan systems have back draft or automatic dampers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Gravity ventilating systems serving conditioned space have either automatic or readily accessible, manually operating dampers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Protection of Insulation. Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Cellular foam insulation shall be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation that can cause degradation of the material.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Flexible ducts cannot have porous inner cores.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
§ 114: Pool and Spa Heating Systems and Equipment				
1. A thermal efficiency that complies with the Appliance Efficiency Regulations, on-off switch mounted outside of the heater, weatherproof operating instructions, no electric resistance heating and no pilot light.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. System is installed with:				
a. At least 36" of pipe between filter and heater for future solar heating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Cover for outdoor pools or outdoor spas.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Pool system has directional inlets and a circulation pump time switch.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
§ 115: Gas fired fan-type central furnaces, pool heaters, spa heaters or household cooking appliances have no continuously burning pilot light. (Exception: Non-electrical cooking appliances with pilot < 150 Btu/hr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
§ 118 (i): Cool Roof material meets specified criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Lighting Measures</b>				
§ 150(k)1: HIGH EFFICACY LUMINAIRES OTHER THAN OUTDOOR HID: contain only high efficacy lamps as outlined in Table 150-C, and do not contain a medium screw base socket (E24/E26). Ballasts for lamps 13 Watts or greater are electric and have an output frequency no less than 20 kHz.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
§ 150(k)1: HIGH EFFICACY LUMINAIRES - OUTDOOR HID: contain only high efficacy lamps as outlined in Table 150-C, luminaire has factory installed HID ballast.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
§ 150(k)2: Permanently installed luminaires in kitchens shall be high efficacy luminaires. Up to 50% of the Wattage, as determined in Section 130(c), of permanently installed luminaires in kitchens may be in luminaires that are not high efficacy luminaires, provided that these luminaires are controlled by switches separate from those controlling the high efficacy luminaires.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
§ 150(k)3: Permanently installed luminaires in bathrooms, garages, laundry rooms, utility rooms shall be high efficacy luminaires. OR are controlled by an occupant sensor(s) certified to comply with Section 119(d).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
§ 150(k)4: Permanently installed luminaires located other than in kitchens, bathrooms, garages, laundry rooms, and utility rooms shall be high efficacy luminaires (except closets less than 70 ft) OR are controlled by a dimmer switch OR are controlled by an occupant sensor that complies with Section 119(d) that does not turn on automatically or have an always on option.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
§ 150(k)5: Luminaires that are recessed into insulated ceilings are approved for zero clearance insulation cover (IC) and are certified to ASTM E283 and labeled as air tight (AT) to less than 2.0 CFM at 75 Pascals.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
§ 150(k)6: Luminaires providing outdoor lighting and permanently mounted to a residential building or to other buildings on the same lot shall be high efficacy luminaires (not including lighting around swimming pools/water features or other Article 680 locations) OR are controlled by occupant sensors with integral photo control certified to comply with Section 119(d).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
§ 150(k)7: Lighting for parking lots for 8 or more vehicles shall have lighting that complies with Sections 130, 132, and 147. Lighting for parking garages for 8 or more vehicles shall have lighting that complies with Section 130, 131, and 146.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
§ 150(k)8: Permanently installed lighting in the enclosed, non-dwelling spaces of low-rise residential buildings with four or more dwelling units shall be high efficacy luminaires OR are controlled by occupant sensor(s) certified to comply with Section 119(d).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



# HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

<b>PROJECT NAME</b> City of Fort Bragg 2nd dwelling 768 sq. ft. units	<b>DATE</b> 4/20/2009
<b>SYSTEM NAME</b> HVAC System	<b>FLOOR AREA</b> 612

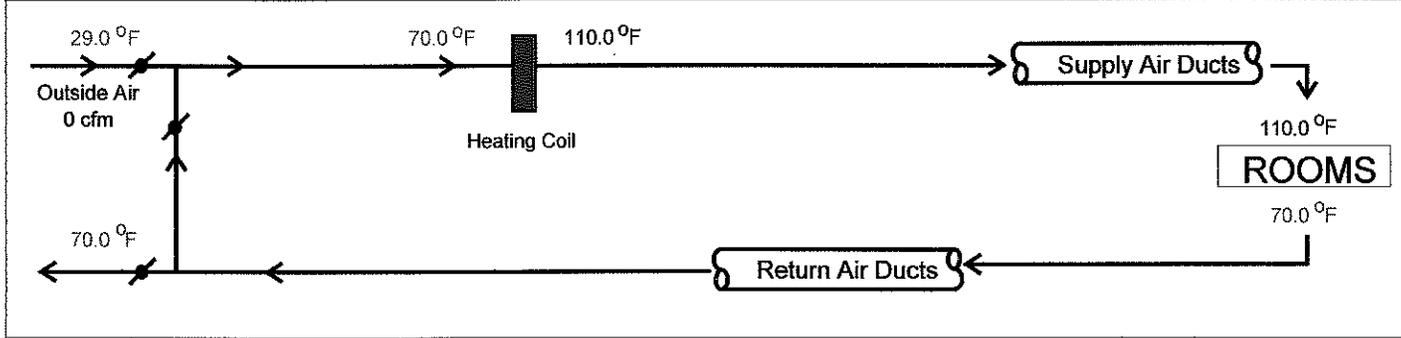
ENGINEERING CHECKS	
<b>Number of Systems</b>	1
<b>Heating System</b>	
Output per System	14,000
Total Output (Btuh)	14,000
Output (Btuh/sqft)	22.9
<b>Cooling System</b>	
Output per System	0
Total Output (Btuh)	0
Total Output (Tons)	0.0
Total Output (Btuh/sqft)	0.0
Total Output (sqft/Ton)	0.0
<b>Air System</b>	
CFM per System	0
Airflow (cfm)	0
Airflow (cfm/sqft)	0.00
Airflow (cfm/Ton)	0.0
Outside Air (%)	0.0
Outside Air (cfm/sqft)	0.00

	COIL COOLING PEAK			COIL HTG. PEAK	
	CFM	Sensible	Latent	CFM	Sensible
<b>Total Room Loads</b>	406	10,066	800	234	10,078
<b>Return Vented Lighting</b>		0			
<b>Return Air Ducts</b>		0			0
<b>Return Fan</b>		0			0
<b>Ventilation</b>	0	0	0	0	0
<b>Supply Fan</b>		0			0
<b>Supply Air Ducts</b>		0			0
<b>TOTAL SYSTEM LOAD</b>		10,066	800		10,078

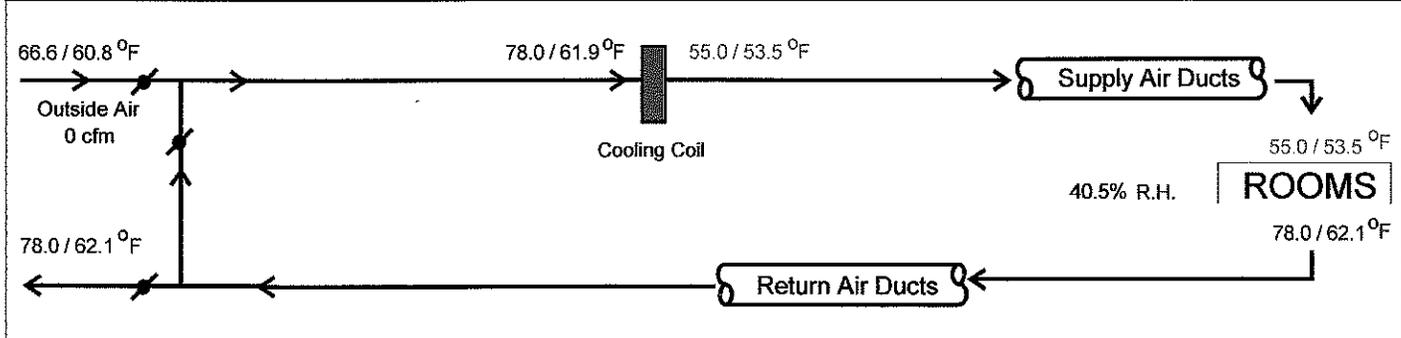
HVAC EQUIPMENT SELECTION			
spaceheater	0	0	14,000
<b>Total Adjusted System Output</b> (Adjusted for Peak Design Conditions)	0	0	14,000
<b>TIME OF SYSTEM PEAK</b>	Aug 2 pm		Jan 12 am

Note: values above given at ARI conditions

## HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



## COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)





767 SF. D HIT

ID	Sub Category	Floor	Manufacturer	Code	Size	Description	Count	Extra	Unit	Price	Total Cost	Comment
1	<b>General</b>											
2	GN1	0			26 3/4 high Wall	6" Concrete stem wall	111		0 ft			
3	GN2	0				heated ceiling area	703.00	0.00	sq ft			
4	GN3	1			109 high Wall	Siding-6	64		0 ft			
5	GN4	1			108 7/8 high Wall	Siding-6	24		0 ft			
6	GN5	1			111 1/2 high Wall	Siding-6	24		0 ft			
7	GN6	1			102 7/8 high Wall	Interior-4	3		0 ft			
8	GN7	1			94 high Wall	Interior-4	25		0 ft			
9	GN8	1			102 5/8 high Wall	Interior-4	12		0 ft			
10	GN9	1			102 9/16 high Wal	Interior-4	12		0 ft			
11	GN10	1			94 high Wall	Interior-6	10		0 ft			
12	GN11	1			103 9/16 high Wal	Interior-6	8		0 ft			
13	GN12	1			103 1/8 high Wall	Interior-4	18		0 ft			
14	GN13	1				heated ceiling area	70.00	0.00	sq ft			
15	GN14	1				heated floor area	768.00	0.00	sq ft			
16	GN15	1				heated roof area	768.00	0.00	sq ft			
17	GN16	1				heated wall area - West	136.00	0.00	sq ft			
18	GN17	1				heated window area - W	24.00	0.00	sq ft			
19	GN18	1				heated door area - Wes	20.00	0.00	sq ft			
20	GN19	1				heated wall area - North	226.00	0.00	sq ft			
21	GN20	1				heated window area - N	42.00	0.00	sq ft			
22	GN21	1				heated wall area - East	103.00	0.00	sq ft			
23	GN22	1				heated window area - Ei	10.00	0.00	sq ft			
24	GN23	1				heated wall area - South	96.00	0.00	sq ft			
25	GN24	1				heated window area - Si	16.00	0.00	sq ft			
26	GN25	2			75 3/4 high Wall	Siding 6-hardiplank	24		0 ft			
27	GN26	2			2 5/16 high Wall	Siding-6	32		0 ft			
28	GN27	2			47 1/2 high Wall	Siding-6	18		0 ft			
29	GN28	2			68 high Wall	Siding-6	24		0 ft			
30												Subtotal:
31	<b>Foundation</b>											
32	FO1	0			6" thick	Concrete	3.88	0.00	cu yd			
33	FO2	0			1/2x6"	foam sill seal	111		0 ft			
34	FO3	0				foundation bolts	26		0			
35	FO4	0			12x6"h	concrete footing	2.04	0.00	cu yd			
36	FO5	0			no. 4	rebar (footing)	119		0 ft			
37	FO6	0			no. 4	horiz. rebar (wall)	355		0 ft			
38	FO7	0			no. 4	vert. rebar (wall)	125		0 ft			
39	FO8	0			12" thick	post footing - concrete	1.95	0.00	cu yd			
40	FO9	0			no. 5	rebar (footing)	62		0 ft			
41												Subtotal:
42	<b>Subfloor</b>											
43	SF1	1			4'x8'x3/4"	OSB-Hrz	24		0			
44	SF2	1			4x6"-32'	floor beam - lumber	3		0			
45	SF3	1			4x4"-2'	post - lumber	23		0			
46	SF4	1			2x6"	treated sill plate - lumber	111		0 ft			
47	SF5	1			2x6"	rim joists - lumber	112		0 ft			
48	SF6	1			2x6"-10'	floor joists - lumber	60		0			
49	SF7	1			2x6"	floor joists - lumber	240		0 ft			
50	SF8	1			2x6"-24'	floor joists - lumber	1		0			
51	SF9	1			2x6"-12'	floor joists - lumber	1		0			
52	SF10	1			4x6"-22'	floor beam - lumber	1		0			
53	SF11	1			4x6"-10'	floor beam - lumber	1		0			
54	SF12	1			4x6"-227086352'	ceiling beam - lumber	5		0 ft			
55	SF13	1			4x12"-2'	post - lumber	3		0			
56	SF14	1			4x11"-2'	post - lumber	1		0			
57	SF15	1			2x6"-20'	rim joists - lumber	2		0			
58	SF16	1			2x6"-10'	rim joists - lumber	2		0			
59	SF17	1			4x4"-4'	post - lumber	5		0			
60	SF18	1			6x6"-2'	post - lumber	1		0			
61	SF19	1			2x6"-14'	floor joists - lumber	1		0			
62	SF20	2			2x6"	rim joists - lumber	55		0 ft			
63	SF21	2			2x6"-10'	rim joists - lumber	1		0			
64	SF22	2			2x6"-12'	rim joists - lumber	1		0			
65	SF23	2			2x6"-14'	floor joists - lumber	9		0			
66	SF24	2			2x6"-10'	floor joists - lumber	15		0			
67	SF25	2			6x6"-14'	post - lumber	1		0			
68	SF26	2			6x8"-20'	ceiling beam - lumber	1		0			

ID	Sub Category	Floor	Manufacturer	Code	Size	Description	Count	Extra	Unit	Price	Total Cost	Comment
69	SF27	2			4x8"-10'	ceiling joists - lumber	1	0				
70	SF28	2			2x6"	ceiling joists - lumber	65	0	ft			
71	SF29	2			4x8"-12'	ceiling joists - lumber	1	0				
72	SF30	2			2x6"-20'	ceiling joists - lumber	1	0				
73												Subtotal:
74	<b>Framing</b>											
75	F1	1			2x6"-104 1/2"	fir stud	39	0				
76	F2	1			2x4"-104 1/2"	fir stud	59	0				
77	F3	1			2x6	fir plate	422	0	ft			
78	F4	1			4x6"-104 1/2"	fir stud	2	0				
79	F5	1			2x6	fir stud stock	465	0	ft			
80	F6	1			4x8	header - lumber	32	0	ft			
81	F7	1			4x6	header - lumber	23	0	ft			
82	F8	1			2x6"-104 15/16"	fir stud	12	0				
83	F9	1			2x4"-104 15/16"	fir stud	3	0				
84	F10	1			2x4	fir stud stock	52	0	ft			
85	F11	1			2x6"-104 3/8"	fir stud	21	0				
86	F12	1			2x6"-6 3/8"	fir stud	4	0				
87	F13	1			2x4"-104 3/8"	fir stud	2	0				
88	F14	1			4x6"-104 3/8"	fir stud	2	0				
89	F15	1			2x10	header - lumber	15	0	ft			
90	F16	1			2x6	header - lumber	11	0	ft			
91	F17	1			2x6"-107 1/2"	fir stud	19	0				
92	F18	1			2x4"-107 1/2"	fir stud	5	0				
93	F19	1			2x6"-20 3/4"	fir stud	2	0				
94	F20	1			2x2"-107 1/2"	fir stud	1	0				
95	F21	1			2x4	fir plate	177	0	ft			
96	F22	1			2x4"-19 1/2"	fir stud	11	0				
97	F23	1			4x9	header - lumber	8	0	ft			
98	F24	1			2x6"-19 1/2"	fir stud	3	0				
99	F25	1			2x4"-17 3/4"	fir stud	5	0				
100	F26	1			2x4"-95 5/8"	fir stud	1	0				
101	F27	1			2x4"-95 3/8"	fir stud	1	0				
102	F28	2			4'x8'x5 1/2"	Drywall 1/2"	3	0				
103	F29	2			2x6"-44 13/16"	fir stud	2	0				
104	F30	2			2x6	fir plate	56	0	ft			
105	F31	2			2x6	fir stud stock	23	0	ft			
106	F32	2			4x12"	door/window header	3	0	ft			
107												Subtotal:
108	<b>Siding</b>											
109	S1	1			6" wide	LightBlue2	1614	0	ft			
110	S2	1			4'x8'x1/2"	Plywood-hrz	34	0				
111	S3	2			1/2" thick	Neutral White	76.00	0.00	sq ft			
112	S4	2			4'x8'x1/2"	Drywall 1/2"	3	0				
113	S5	2			6" wide	LightBlue2	226	0	ft			
114	S6	2			4'x8'x1/2"	Plywood-hrz	4	0				
115												Subtotal:
116	<b>Exterior Trim</b>											
117	EX1	1			1x4	exterior sill	36	0	ft			
118	EX2	1			1x4	ext. window casing	139	0	ft			
119	EX3	1			1x7-32"	door threshold	1	0				
120	EX4	1			7 in	ext. door jamb	54	0	ft			
121	EX5	1			1x3	ext. door casing	54	0	ft			
122	EX6	1			1x7-60"	door threshold	1	0				
123	EX7	1			1x7-36"	door threshold	1	0				
124	EX8	1			12W12D	Stacked Column - bone	4	0				
125	EX9	1			4" thick	Cream	9.00	0.00	sq ft			
126	EX10	1			1 1/2x7 1/2 in (2)	corner board	42	0	ft			
127	EX11	2			1x4	ext. window casing	23	0	ft			
128												Subtotal:
129	<b>Roofing</b>											
130	R1	1				gutter: Default Gutter	91	0	ft			
131	R2	1			6x12"	ridge board - lumber	36	0	ft			
132	R3	1			4x8"	ridge board - lumber	8	0	ft			
133	R4	1			2x12"-14'	rafters - lumber	7	0				
134	R5	1			2x10"-16'	rafters - lumber	17	0				
135	R6	1			2x10"-14'	rafters - lumber	15	0				
136	R7	1			1x10"-16'	rafters - lumber	1	0				

ID	Sub Category	Floor	Manufacturer	Code	Size	Description	Count	Extra	Unit	Price	Total Cost	Comment
137	R8	1			2x6"-36'	rafters - lumber	2	0				
138	R9	1			2x6"-16'	rafters - lumber	4	0				
139	R10	1			4x6"	rafters - lumber	20	0	ft			
140	R11	1			2x12"-12"	rafters - lumber	4	0				
141	R12	1			2x8"-10'	rafters - lumber	2	0				
142	R13	1			2x8"-14'	rafters - lumber	2	0				
143	R14	1			2x6"	rafter blocking - lumber	14	0	ft			
144	R15	1			2x10"	rafter blocking - lumber	27	0	ft			
145	R16	1			2x12"	rafter blocking - lumber	27	0	ft			
146	R17	1			90 deg. bend	roof/wall flashing	5	0	ft			
147	R18	1			bend to slope	roof/wall flashing	10	0	ft			
148	R19	1				ridge cap	45	0	ft			
149	R20	1				roofing material	1291.00	0.00	sq ft			
150	R21	1			4x8' sheets	roof sheathing	40	0				
151	R22	1			1x8"	gable fascia	106	0	ft			
152	R23	1			1x8"	eave fascia	92	0	ft			
153	R24	1				metal drip edge	198	0	ft			
154	R25	1				downspout	7	0				
155												Subtotal:
156	<b>Insulation</b>											
157	IN1	0			12x16x48" batts	ceiling insulation	131	0				
158	IN2	1			12x24x48" batts	ceiling insulation	8	0				
159	IN3	1			12x16x48" batts	floor insulation	143	0				
160	IN4	1			12x24x48" batts	roof insulation	96	0				
161	IN5	1			6x16x93" batts	wall insulation	51	0				
162												Subtotal:
163	<b>Flooring</b>											
164	FL1	1				Red	160.00	0.00	sq ft			
165	FL2	1			3 1/2" wide	Medium	1751	0	ft			
166	FL3	1			10x10x1/4	Slate	260	0				
167												Subtotal:
168	<b>Wall Board</b>											
169	WB1	1			4x8'x1/2"	Drywall	85	0				
170	WB2	1				Bone	324.00	0.00	sq ft			
171	WB3	2			4x8'x1/2"	Drywall	4	0				
172												Subtotal:
173	<b>Windows</b>											
174	W1	1			48x48-eg	left sliding	2	0				
175	W2	1			42x12	left sliding	1	0				
176	W3	1			24x36	left sliding	1	0				
177	W4	1			42x36	left sliding	1	0				
178	W5	1			30x36	left sliding - color off whi	1	0				
179	W6	1			42x54	left sliding	1	0				
180	W7	1			59 11/16x12-mu	mulled unit	1	0				
181	W8	1			60x90 1/2-mu	mulled unit	1	0				
182	W9	1			42x42	single hung	2	0				
183	W10	2			30x24	fixed glass	2	0				
184												Subtotal:
185	<b>Doors</b>											
186	D1	1				handle: knob	6	0				
187	D2	1				handle: lever (ext.)	2	0				
188	D3	1				hinge: hidden	14	0				
189	D4	1			32"x80"x1 3/4"	ext. hinged 2 Panel 2 Gl	1	0				
190	D5	1			60"x80"x1 3/4"	ext. slider-glass	1	0				
191	D6	1			36"x80"x1 3/4"	ext. hinged 2 Panel 2 Gl	1	0				
192	D7	1			66"x96"x1 3/8"	slider	1	0				
193	D8	1				handle: knob	4	0				
194	D9	1			30"x80"x1 3/8"	hinged 2 Panel Door	3	0				
195	D10	1			84"x96"x1 3/8"	triple slider	1	0				
196	D11	1			30"x80"x1 3/8"	pocket 2 Panel Door	1	0				
197	D12	1			28"x80"x1 3/8"	hinged 2 Panel Door	1	0				
198	D13	1			(4) 13"x80"x1 3/8" 4 dr. bifold-panel		1	0				
199												Subtotal:
200	<b>Cabinets</b>											
201	C1	1			18x12x84"	wall cabinet	1	0				
202	C1.1	1				material - Birch (ho	1	0				
203	C1.2	1			16 1/4x28 1/4"	door - Country (GLI	1	0				
204	C1.3	1			1"	knob	1	0				

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205	C1.4	1				hidden hinge	2	0				
206	C2	1			27 7/8x18x70"	shelf & rod	1	0				
207	C2.1	1				material - Birch (ho	1	0				
208	C3	1			2 3/8x3/4"	Filler	1	0				
209	C4	1				countertop - limestone(b	40.00	0.00	sq ft			
210	C5	1				countertop front cap	39	0	ft			
211	C6	1				backsplash	21	0	ft			
212	C7	1			48x18x36"	base cabinet	1	0				
213	C7.1	1				material - Birch (ho	1	0				
214	C7.2	1			46 1/4x6 3/4"	drawer - Profiled R	1	0				
215	C7.3	1			4"	pull	1	0				
216	C7.4	1			23 1/8x21 1/2"	door - Framed (FP-	2	0				
217	C7.5	1			1"	knob	2	0				
218	C7.6	1				hidden hinge	4	0				
219	C8	1			2 3/4x36"	Filler	1	0				
220	C9	1			36x24x36"	base cabinet	1	0				
221	C9.1	1				material - Birch (ho	1	0				
222	C9.2	1			34 1/4x6 3/4"	drawer - Profiled R	1	0				
223	C9.3	1			4"	pull	1	0				
224	C9.4	1			17 1/8x21 1/2"	door - Framed (FP-	2	0				
225	C9.5	1			1"	knob	2	0				
226	C9.6	1				hidden hinge	4	0				
227	C10	1			24x36"	Filler	1	0				
228	C11	1			24x24x36"	base cabinet	1	0				
229	C11.1	1				material - Birch (ho	1	0				
230	C11.2	1			20 1/4x6 3/4"	drawer - Profiled R	1	0				
231	C11.3	1			4"	pull	1	0				
232	C11.4	1			20 1/4x21 1/2"	door - Framed (FP-	1	0				
233	C11.5	1			1"	knob	1	0				
234	C11.6	1				hidden hinge	2	0				
235	C11.7	1				drawer glide	2	0				
236	C12	1			4 3/4x36"	Filter	2	0				
237	C13	1			24x24x36"	base cabinet	1	0				
238	C13.1	1				material - Birch (ho	1	0				
239	C13.2	1			15 1/4x6 3/4"	drawer - Profiled R	1	0				
240	C13.3	1			4"	pull	1	0				
241	C13.4	1			15 1/4x21 1/2"	door - Framed (FP-	1	0				
242	C13.5	1			1"	knob	1	0				
243	C13.6	1				hidden hinge	2	0				
244	C13.7	1				drawer glide	2	0				
245	C14	1			12x24x36"	base cabinet	1	0				
246	C14.1	1				material - Birch (ho	1	0				
247	C14.2	1			10 1/4x6 3/4"	drawer - Profiled R	1	0				
248	C14.3	1			4"	pull	1	0				
249	C14.4	1			10 1/4x21 1/2"	door - Framed (FP-	1	0				
250	C14.5	1			1"	knob	1	0				
251	C14.6	1				hidden hinge	2	0				
252	C14.7	1				drawer glide	2	0				
253	C15	1			24x12x84"	wall cabinet	1	0				
254	C15.1	1				material - Birch (ho	1	0				
255	C15.2	1			22 1/4x28 1/2"	door - Country (GLI	1	0				
256	C15.3	1			1"	knob	1	0				
257	C15.4	1				hidden hinge	2	0				
258	C16	1			37 9/16x12x70"	shelf & rod	1	0				
259	C18.1	1				material - Birch (ho	1	0				
260	C17	1			7 1/4x3/4"	Filler	1	0				
261	C18	1			54 1/4x12x70"	shelf & rod	1	0				
262	C18.1	1				material - Birch (ho	1	0				
263	C19	1			29 1/4x26x70"	shelf & rod	1	0				
264	C19.1	1				material - Birch (ho	1	0				
265	C20	1			11 3/4x3/4"	Filler	1	0				
266	C21	1			1/4x3/4"	Filler	1	0				
267	C22	1			47 5/16x12x70"	shelf & rod	1	0				
268	C22.1	1				material - Birch (ho	1	0				
269	C23	1			38x12x84"	wall cabinet	1	0				
270	C23.1	1				material - Birch (ho	1	0				
271	C23.2	1			18 1/8x28 1/2"	door - Country (GLI	2	0				
272	C23.3	1			1"	knob	2	0				

ID	Sub Category	Floor	Manufacturer	Code	Size	Description	Count	Extra	Unit	Price	Total Cost	Comment
273	C23.4	1				hidden hinge	4	0				
274	C24	1			34x12x84"	wall cabinet	1	0				
275	C24.1	1				material - Birch (ho	1	0				
276	C24.2	1			16 1/8x13 3/4"	door - Country (GLI	2	0				
277	C24.3	1			1"	knob	2	0				
278	C24.4	1				hidden hinge	4	0				
279	C25	1			16 5/16x8x70"	shelf & rod	1	0				
280	C25.1	1				material - Birch (ho	1	0				
281	C26	1			1 3/16x3/4"	Filler	1	0				
282	C27	1				Limestone(buff)	8.00	0.00 sq ft				
283												Subtotal:
284	<b>Interior Trim</b>											
285	T1	1			1x3	window apron	33	0 ft				
286	T2	1			1x3	sill	33	0 ft				
287	T3	1			1x3	interior casing	456	0 ft				
288	T4	1			1x3	window apron - cream	4	0 ft				
289	T5	1			1x3	sill - cream	4	0 ft				
290	T6	1			1x3	interior casing - cream	10	0 ft				
291	T7	1			1x3	interior casing - surf	27	0 ft				
292	T8	1			5 in	interior jamb	133	0 ft				
293	T9	1			7 in	interior jamb	17	0 ft				
294	T10	1			3 1/2" thick	Oak (warm)	4.00	0.00 sq ft				
295	T11	1			5 1/2" wide	int. railing	49	0 in				
296	T12	1			1 3/16" diam.	square baluster	8	0				
297	T13	1			93 1/4x10-1"	stair tread	2	0				
298	T14	1			93 1/4x6 5/16"	riser	2	0				
299	T15	1			2 treads	stair stringer	6	0				
300	T16	1			103 5/8x11 9/16-1	stair tread	2	0				
301	T17	1			103 5/8x6 5/16"	riser	2	0				
302	T18	1			55 1/16x12 1/16-1	stair tread	2	0				
303	T19	1			55 1/16x6 5/16"	riser	2	0				
304	T20	1			1x4	base molding	263	0 ft				
305	T21	2			1x3	window apron	7	0 ft				
306	T22	2			1x3	sill	7	0 ft				
307	T23	2			1x3	interior casing	16	0 ft				
308												Subtotal:
309	<b>Fixtures</b>											
310	FX1	1			60W32D	Left Tub-Shower	1	0				
311	FX2	1			30W36D	Toilet	1	0				
312	FX3	1			21 3/8W17 1/8D	Oval 20"	1	0				
313	FX4	1			31 1/2W22D	Offset Sink	1	0				
314	FX5	1			15 3/4W9D	Tankless Water Heater	1	0				
315	FX6	1			18 1/2W18 1/2D	Bird Bath - landscape w	1	0				
316												Subtotal:
317	<b>Appliance</b>											
318	A1	1			24W28D	Laundry Center (small)	1	0				
319	A2	1			35 3/4W32 1/2D	Freezer on Top	1	0				
320	A3	1			29 1/2W23 1/2D	Gas [29 1/2W]	1	0				
321	A4	1			24W22D	Dishwasher (basic)	1	0				
322	A5	1			36W6 1/2D	Convection Heater	1	0				
323												Subtotal:
324	<b>Furniture</b>											
325	FU1	1			36W18 1/8D	Flat Panel TV (on stand)	1	0				
326	FU2	1			37W38 1/2D	Rita Arm Chair	1	0				
327	FU3	1			69 1/4W88 5/8D	Queen (craftsman)	1	0				
328	FU4	1			36W36D	Square Basic	1	0				
329	FU5	1			18W22 1/4D	Federal Chair	4	0				
330	FU6	1			18W22D	Country Stool - flower(iv	3	0				
331	FU7	1			85 1/16W38 1/2D	Rita Sofa Set	1	0				
332	FU8	1			84 3/4W82 1/4D	Loft Bunk	1	0				
333	FU9	1			36W20 1/4D	4-Drawer Chest	1	0				
334	FU10	1			48W18D	Garden Bench - concret	1	0				
335												Subtotal:
336	<b>Electrical</b>											
337	E1	1			wall mount	GFCI	13	0				
338	E2	1			wall mount	Electrical Panel	1	0				
339	E3	1			wall mount	Smoke Detector	1	0				
340	E4	1			wall mount	Single Pole	13	0				

