CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Permit No: 0501907
Insp Area: 4
Thos Bros: 257H6

Site Address: 742 IRVING AV SAC
Parcel No: 226-0122-045 Expanded North DRD

Sub-Type: NSFR
Housing (Y/N): N

CONTRACTOR
OWNER BUILDER
742 IRVING AV
SACRAMENTO

OWNER
GENNADIY VERBITSKIY
SACRAMENTO CA
00000

ARCHITECT
NIKOLAY LESHCHIK

Nature of Work: NEW SINGLE FAMILY RESIDENCE

CONSTRUCTION LENDING AGENCY : I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name_____ Lender'sAddress_____

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class_____ License Number C000005935 Date_____ Contractor Signature_____

OWNER-BUILDER DECLARATION: I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code; any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500.00);

GV I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

_____ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).

_____ I am exempt under Sec._____ B & PC for this reason:_____

Date 10/20/05 Owner Signature_____

IN ISSUING THIS BUILDING PERMIT, the applicant represents, and the city relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and herby authorize representative(s) of this city to enter upon the above mentioned property for inspection purposes.

PAID
CITY OF SACRAMENTO
OCT 20 2005
NEW CITY HALL

Date 10/20/05 Applicant/Agent Signature_____

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury one of the following declarations:

CO I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

_____ I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier Policy Number Exp Date

_____ (This section need not be completed if the permit is for $100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Date 10/20/05 Applicant Signature_____

WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS ($100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

~~THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.~~

TITLE 24 REPORT

Title 24 Report for:

Irving Ave
Sacramento, CA 95838

Project Designer:

Leshchik Nikolay

Report Prepared By:

Feitser E.
Feitser Construction
1220 Melody Lane Suite 110
Roseville, CA 95678
(916) 784-3006

FEITSER CONSTRUCTION

Job Number:

Job Copy

Later

1/19/2005

CITY OF SACRAMENTO
PERMIT ASSISTANCE

FEB 1 0 2005

RECEIVED

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 2001 Building Energy Efficiency Standards.

This program developed by EnergySoft, LLC (415) 883-5900.

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Certificate of Compliance: Residential (Part 1 of 2) CF-1R

Project Title: Irving Ave Sacramento	Date: 1/19/2005
Project Address	Building Permit #
Documentation Author: Feitser Construction	Telephone: (916) 784-3006
Compliance Method (Package or Computer): Computer Performance	Climate Zone: 12
	Plan Check / Date
	Field Check / Date
	Enforcement Agency Use Only

GENERAL INFORMATION

Total Conditioned Floor Area: 2,121 ft²
Total Conditioned Slab Area: 0 ft²
Average Ceiling Height: 9.0 ft

Building Type:
(check one or more)

- [X] Single Family Detached
- [ ] Single Family Attached
- [ ] Multi-Family
- [ ] Addition
- [ ] Existing Building
- [ ] Existing Plus Addition

Front Orientation: (North) 0 deg
Number of Dwelling Units: 1.00
Number of Stories: 1

Floor Construction Type:
- [ ] Slab Floor
- [X] Raised Floor

BUILDING SHELL INSULATION

Component Type	Frame Type	Const. Assembly U-Value	Location/Comments (attic, garage, typical, etc.)
R-19 Floor (F.19.2x8.16)	Wood	0.038	Exterior Floor / Over Crawlspace (w/R-6 Credit)
R-13 Wall (W.13.2x4.16)	Wood	0.088	Exterior Wall
Solid Wood Door	None	0.387	Exterior Door
R-38 Roof (R.38.2x4.24)	Wood	0.024	Exterior Roof

FENESTRATION

Type	Orientation	Area (SF)	U-Factor	Fenestration SHGC	Exterior Shading	Shading Devices: Overhang Yes / No		Side Fins Yes / No	
Front	(North)	39.0	0.40	0.65	Bug Screen	[ ]	[X]	[ ]	[X]
Left	(East)	119.0	0.40	0.65	Bug Screen	[ ]	[X]	[ ]	[X]
Rear	(South)	26.0	0.40	0.65	Bug Screen	[ ]	[X]	[ ]	[X]
Right	(West)	80.0	0.40	0.65	Bug Screen	[ ]	[X]	[ ]	[X]

Certificate of Compliance: Residential (Part 2 of 2) CF-1R

Project Title

1/19/2005
Date

HVAC SYSTEMS

Note: Input Hydronic or Combined Hydronic data under Water Heating Systems, except Design Heating Load.

Heating Equipment Type (furnace, heat pump, etc.)	Minimum Efficiency (AFUE/HSPF)	Distribution Type and Location (ducts, attic, etc.)	Duct or Piping R-Value	Thermostat Type	Location / Comments
Central Furnace	94% AFUE	Ducts in Attic	4.2	Setback	HVAC System

Cooling Equipment Type (air conditioner, heat pump, evap. cooling)	Minimum Efficiency (SEER)	Duct Location (attic, etc.)	Duct R-Value	Thermostat Type	Location / Comments
Split Air Conditioner	10.5 SEER	Ducts in Attic	4.2	Setback	HVAC System

WATER HEATING SYSTEMS

Water Heater System Name	Water Heater Type	Distribution Type	# in Syst.	Rated Input[1] Btu/hr	Tank Cap. (gal)	Energy Fact.[1] or Recovery Efficiency	Standby[1] Loss (%)	External Tank Insul. R-Value
Standard Gas 50 gal or Less	Small Gas	Standard	1	40,000	50	0.52	n/a	12

1 For small gas storage (rated inputs of less than or equal to 75,000 Btu/hr), electric resistance and heat pump water heaters, list energy factor.
For large gas storage water heaters (rated input of greater than 75,000 Btu/hr), list Rated Input, Recovery Efficiency and Standby Loss.
For instantaneous gas water heaters, list Rated Input and Recovery Efficiency.

REMARKS

COMPLIANCE STATEMENT

This certificate of compliance lists the building features and performance 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 recognize that compliance using duct sealing and TXV's requires installer testing and certification and field verification by an approved HERS rater.

Designer or Owner (per Business & Professions Code)

Name:
Title/Firm: Leshchik Nikolay
Address:

Telephone:
Lic. #:

(signature) (date)

Documentation Author

Name: Feitser E.
Title/Firm: Feitser Construction
Address: 1220 Melody Lane Suite 110
Roseville, CA 95678
Telephone: (916) 784-3006

(signature) 01/19/05 (date)

Enforcement Agency

Name:
Title/Firm:
Address:
Telephone:

(signature/stamp) (date)

Certificate of Compliance: Residential (Addendum) CF-1R

1/19/2005
Date

Project Title

Special Features and Modeling Assumptions

The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification to be used with the performance approach. The local enforcement agency determines the adequacy of the justification, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted.

	Plan	Field
The DHW System "Standard Gas 50 gal or Less" Energy Factor = 0.525. An EF below 0.58 requires an R-12 External Blanket.		

HERS Required Verification

These features must be confirmed and/or tested by a certified HERS rater under the supervision of a CEC approved HERS provider. The HERS rater must document the field verification and diagnostic testing of these measures on a form CF-6R.

	Plan	Field

Mandatory Measures Checklist: 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. Items marked with an asterisk (*) may be superseded by more stringent compliance requirements listed on the Certificate of Compliance. 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 or enter N/A if not applicable.	DESIGNER	ENFORCEMENT
Building Envelope Measures		
[X] *§150(a): Minimum R-19 ceiling insulation.		
[X] §150(b): Loose fill insulation manufacturer's labeled R-Value.		
[X] *§150(c): Minimum R-13 wall insulation in wood framed walls or equivalent U-value in metal frame walls (does not apply to exterior mass walls).		
[X] *§150(d): Minimum R-13 raised floor insulation in framed floors or equivalent.		
[X] §150(l): Slab edge insulation - water absorption rate no greater than 0.3%, water vapor transmission rate no greater than 2.0 perm/inch.		
[X] §118: Insulation specified or installed meets insulation quality standards. Indicate type and form.		
[X] §116-17: Fenestration Products, Exterior Doors and Infiltration/Exfiltration Controls 1. Doors and windows between conditioned and unconditioned spaces designed to limit air leakage. 2. Fenestration products (except field fabricated) have label with certified U-Factor, certified Solar Heat Gain Coefficient (SHGC), and infiltration certification. 3. Exterior doors and windows weatherstripped; all joints and penetrations caulked and sealed.		
[ ] §150(g): Vapor barriers mandatory in Climate Zones 14 and 16 only.		
[ ] §150(f): Special infiltration barrier installed to comply with Section 151 meets Commission quality standards.		
[X] §150(e): Installation of Fireplaces, Decorative Gas Appliances and Gas Logs. 1. Masonry and factory-built fireplaces have: a. Closeable metal or glass door b. Outside air intake with damper and control c. Flue damper and control 2. No continuous burning gas pilots allowed.		
Space Conditioning, Water Heating and Plumbing System Measures		
[X] §110-13: HVAC equipment, water heaters, showerheads and faucets certified by the Commission.		
[X] §150(h): Heating and/or cooling loads calculated in accordance with ASHRAE, SMACNA or ACCA.		
[X] §150(i): Setback thermostat on all applicable heating and/or cooling systems.		
[X] §150(j): Pipe and Tank 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. 2. First 5 feet of pipes closest to water heater tank, non-recirculating systems, insulated (R-4 or greater) 3. Back-up tanks for solar system, unfired storage tanks, or other indirect hot water tanks have R-12 external insulation or R-16 combined internal/external insulation. 4. All buried or exposed piping insulated in recirculating sections of hot water systems. 5. Cooling system piping below 55 degrees F. insulated. 6. Piping insulating between heating source and indirect hot water tank.		

Mandatory Measures Checklist: 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. Items marked with an asterisk (*) may be superseded by more stringent compliance requirements listed on the Certificate of Compliance. 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 or enter N/A if not applicable.	DESIGNER	ENFORCEMENT
Space Conditioning, Water Heating and Plumbing System Measures: (continued)		
☐ *§150(m): Ducts and Fans 1. All ducts and plenums installed, sealed and insulated to meet the requirements of the 1998 CMC Sections 601, 603, 604 and Standard 6-3; ducts insulated to a minimum installed level of R-4.2 or enclosed entirely in conditioned space. Openings shall be sealed with mastic, tape, aerosol sealant, or other duct-closure system that meets the applicable requirements of UL181, UL181A, or UL181B. 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. Building cavities shall not be used for conveying conditioned air. 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 drawbands. 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. 3. Joints and seams of duct systems and their components shall not be sealed with cloth back rubber adhesive duct tapes unless such a tape is used in combination with mastic and drawbands. 4. Exhaust fan systems have back draft or automatic dampers. 5. Gravity ventilation systems serving conditioned space have eitherautomatic or readily accessible, manually operated dampers. 6. Protection of Insulation. Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind but not limited to the following: Insulation exposed to weather shall be suitable for outdoor service e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover. 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.		
☐ §114: Pool and Spa Heating Systems and Equipment 1. Certified with 78% thermal efficiency, on-off switch, weatherproof operating instructions, no electric resistance heating, and no pilot. 2. System is installed with at least 36" of pipe between filter and heater for future solar, cover for outdoor pools or spas. a. At least 36" of pipe between filter and heater for future solar heating. b. Cover for outdoor pools or outdoor spas. 3. Pool system has directional inlets and a circulation pump time switch.		
☒ §115: Gas fired 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)		
☐ §118 (f): Cool Roof material meet specified criteria		
Lighting Measures		
☒ §150(k)1: Luminaires for general lighting in kitchens shall have lamps with an efficacy 40 lumens/watt or greater for general lighting in kitchens. This general lighting shall be controlled by a switch on a readily accessible lighting control panel at an entrance to the kitchen.		
☒ §150(k)2: Rooms with a shower or bathtub must have either at least one luminaire with lamps with an efficacy of 40 lumens/watt or greater switched at the entrance to the room or one of the alternative to this requirement allowed in Section 150(k)2.; and recessed ceiling fixtures are IC (Insulation cover) approved.		

Computer Method Summary

(Part 1 of 3) **C-2R**

Project Title: Irving Ave Sacramento	Date: 1/19/2005
Project Address: Feitser Construction	(916) 784-3006
Documentation Author: Computer Performance	Telephone: 12
Compliance Method (Package or Computer)	Climate Zone
	Building Permit #
	Plan Check/Date
	Field Check/Date

Source Energy Use (kBtu/sf-yr)	Standard Design	Proposed Design	Compliance Margin
Space Heating	14.51	5.71	8.81
Space Cooling	9.56	12.18	-2.62
Domestic Hot Water	12.57	12.56	0.00
Totals	36.65	30.45	6.19
Percent better than Standard:			16.9%

BUILDING COMPLIES

Total Conditioned Floor Area: 2,121 ft²
Building Type: Single Fam Detached
Building Front Orientation: (North) 0 deg
Number of Dwelling Units: 1.00
Number of Stories: 1

Floor Construction Type: [X] Raised Floor [ ] Slab Floor
Total Fenestration Area: 12.4%
Total Conditioned Volume: 19,089 ft³
Total Conditioned Slab Area: 0 ft²

BUILDING ZONE INFORMATION

Zone Name	Floor Area	Volume	# of Units	Zone Type	Thermostat Type	Vent Hgt.	Vent Area
HVAC System	2,121	19,089	1.00	Conditioned	Setback	2	n/a

OPAQUE SURFACES

Type	Area	U-Fac.	Act. Azm.	Tilt	Solar Gains Y / N	Form 3 Reference	Location / Comments
FloorCS	2,121	0.038	0	180	X	R-19 Floor (F.19.2x8.16)	1st Floor
Wall	324	0.088	0	90	X	R-13 Wall (W.13.2x4.16)	1st Floor
Door	24	0.387	0	90	X	Solid Wood Door	1st Floor
Wall	503	0.088	90	90	X	R-13 Wall (W.13.2x4.16)	1st Floor
Door	20	0.387	90	90	X	Solid Wood Door	1st Floor
Wall	361	0.088	180	90	X	R-13 Wall (W.13.2x4.16)	1st Floor
Wall	544	0.088	270	90	X	R-13 Wall (W.13.2x4.16)	1st Floor
Door	18	0.387	270	90	X	Solid Wood Door	1st Floor
Roof	2,121	0.024	0	0	X	R-38 Roof (R.38.2x4.24)	1st Floor

Computer Method Summary

(Part 2 of 3) **C-2R**

Project Title

Date 1/19/2005

FENESTRATION SURFACES

#	Type			Area	U-Factor	SHGC	Act. Azm.	Tilt	Glazing Type	Location/ Comments
1	Window	Front	(North)	39.0	0.400	0.65	0	90	Double Vinyl Window	1st Floor
2	Window	Left	(East)	119.0	0.400	0.65	90	90	Double Vinyl Window	1st Floor
3	Window	Rear	(South)	26.0	0.400	0.65	180	90	Double Vinyl Window	1st Floor
4	Window	Right	(West)	80.0	0.400	0.65	270	90	Double Vinyl Window	1st Floor

INTERIOR AND EXTERIOR SHADING

#	Exterior Shade Type	SHGC	Window Hgt.	Window Wd.	Overhang Len.	Overhang Hgt.	Overhang LExt.	Overhang RExt.	Left Fin Dist.	Left Fin Len.	Left Fin Hgt.	Right Fin Dist.	Right Fin Len.	Right Fin Hgt.
1	Bug Screen	0.76												
2	Bug Screen	0.76												
3	Bug Screen	0.76												
4	Bug Screen													

Computer Method Summary

(Part 3 of 3) **C-2R**

Project Title

Date 1/19/2005

THERMAL MASS FOR HIGH MASS DESIGN

Type	Area (sf)	Thick. (in.)	Heat Cap.	Cond.	Form 3 Reference	Inside R-Val.	Location Comments
Frame Wall, Gyp. Board	324	0.00	13	0.09	R-13 Wall (W.13.2x4.16)	2	1st Floor / Exterior Mass
Frame Wall, Gyp. Board	503	0.00	13	0.09	R-13 Wall (W.13.2x4.16)	2	1st Floor / Exterior Mass
Frame Wall, Gyp. Board	361	0.00	13	0.09	R-13 Wall (W.13.2x4.16)	2	1st Floor / Exterior Mass
Frame Wall, Gyp. Board	544	0.00	13	0.09	R-13 Wall (W.13.2x4.16)	2	1st Floor / Exterior Mass

PERIMETER LOSSES

Type	Length	F2 Factor	Insulation R-Val.	Insulation Depth	Location / Comments

HVAC SYSTEMS

Heating Equipment Type (furnace, heat pump, etc.)	Minimum Efficiency (AFUE/HSPF)	Distribution Type and Location (ducts/attic, etc.)	Duct R-Value	Thermostat Type	Location / Comments
Central Furnace	94% AFUE	Ducts in Attic	4.2	Setback	HVAC System

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

Cooling Equipment Type (air conditioner, heat pump, evap. cooling)	Minimum Efficiency (SEER)	Duct Location (attic, etc,)	Duct R-Value	Thermostat Type	Location / Comments
Split Air Conditioner	10.5 SEER	Ducts in Attic	4.2	Setback	HVAC System

WATER HEATING SYSTEMS

Water Heater System Name	Water Heater Type	Distribution Type	# in Syst.	Rated Input[1] (Btu/hr)	Tank Cap. (gal)	Energy Fact.[1] or Recovery Efficiency	Standby Loss (%)[1]	Tank Insul. R-Value Ext.
Standard Gas 50 gal or Less	Small Gas	Standard	1	40,000	50	0.52	n/a	12

1 For small gas storage (rated input <= 75000 Btu/hr), electric resistance and heat pump water heaters, list energy factor.
For large gas storage water heaters (rated input > 75000 Btu/hr), list Rated Input, Recovery Efficiency and Standby Loss.
For instantaneous gas water heaters, list Rated Input, and Recovery Efficiency.

REMARKS

Computer Method Summary

(Addendum) **C-2R**

1/19/2005
Date

Project Title

Special Features and Modeling Assumptions

The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification to be used with the performance approach. The local enforcement agency determines the adequacy of the justification, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted.

	Plan	Field
The DHW System "Standard Gas 50 gal or Less" Energy Factor = 0.525. An EF below 0.58 requires an R-12 External Blanket.		

HERS Required Verification

These features must be confirmed and/or tested by a certified HERS rater under the supervision of a CEC approved HERS provider. The HERS rater must document the field verification and diagnostic testing of these measures on a form CF-6R.

	Plan	Field

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

PROJECT NAME	DATE 1/19/2005
	FLOOR AREA 2,121

SYSTEM NAME HVAC System

ENGINEERING CHECKS

Number of Systems	1
Heating System	
Output per System	99,000
Total Output (Btuh)	99,000
Output (Btuh/sqft)	46.7
Cooling System	
Output per System	51,500
Total Output (Btuh)	51,500
Total Output (Tons)	4.3
Total Output (Btuh/sqft)	24.3
Total Output (sqft/Ton)	494.2
Air System	
CFM per System	1,600
Airflow (cfm)	1,600
Airflow (cfm/sqft)	0.75
Airflow (cfm/Ton)	372.8
Outside Air (%)	0.0
Outside Air (cfm/sqft)	0.00

Note: values above given at ARI conditions

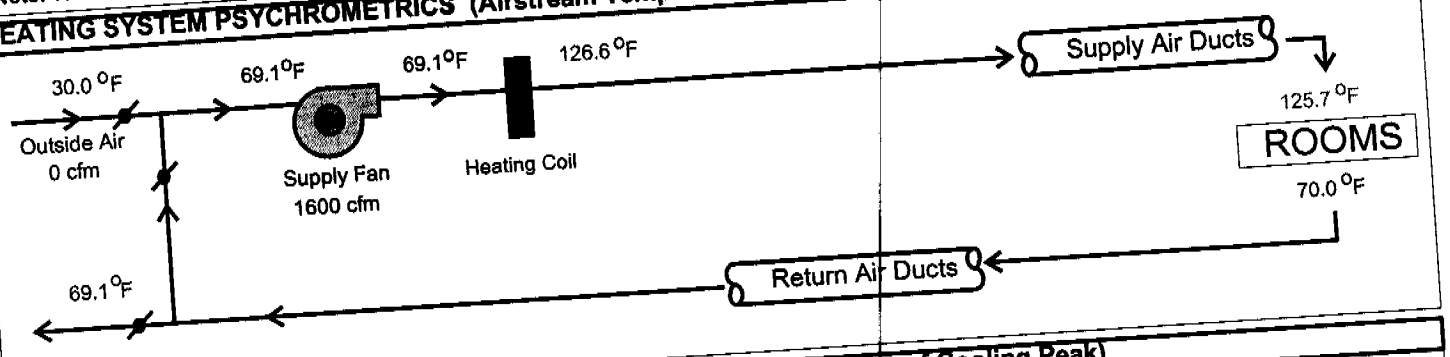
SYSTEM LOAD

	COIL COOLING PEAK CFM	Sensible	Latent	COIL HTG. PEAK CFM	Sensible
Total Room Loads	1,415	34,684	-353	521	31,221
Return Vented Lighting		0			
Return Air Ducts		1,734			1,561
Return Fan		0			0
Ventilation	0	0	0	0	0
Supply Fan		0			0
Supply Air Ducts		1,734			1,561
TOTAL SYSTEM LOAD		38,152	-353		34,343

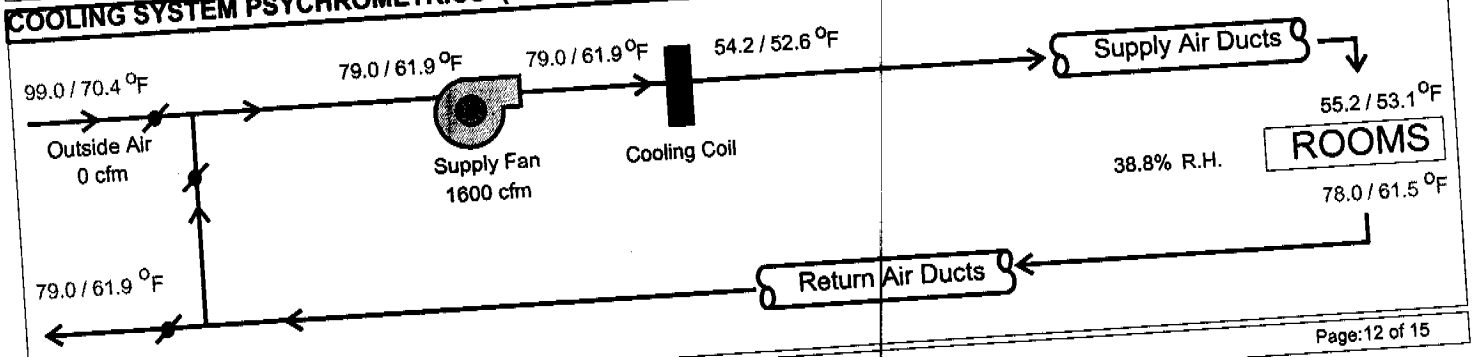
HVAC EQUIPMENT SELECTION

Day&Night 398baz060100	42,689	3,815	99,000
Total Adjusted System Output (Adjusted for Peak Design Conditions)	42,689	3,815	99,000
TIME OF SYSTEM PEAK	Aug 2 pm		Jan 12 am

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



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



ROOM LOAD SUMMARY

PROJECT NAME

DATE 1/19/2005

SYSTEM NAME HVAC System

FLOOR AREA 2,121

ROOM LOAD SUMMARY

ZONE NAME	ROOM NAME	Mult.	ROOM COOLING PEAK			COIL COOLING PEAK			COIL HTG. PEAK	
			CFM	SENSIBLE	LATENT	CFM	SENSIBLE	LATENT	CFM	SENSIBLE
1st Floor	1st Floor	1	1,415	34,684	-353	1,415	34,684	-353	521	31,221
PAGE TOTAL			1,415	34,684	-353	521	31,221			
TOTAL			1,415	34,684	-353	521	31,221			

ROOM HEATING PEAK LOADS

Project Title	Date
	1/19/2005

Room Information		Design Conditions	
Room Name	1st Floor	Time of Peak	Jan 12 am
Floor Area	2,121	Outdoor Dry Bulb Temperature	30 °F
Indoor Dry Bulb Temperature	70 °F		

Conduction	Area		U-Value		ΔT °F		Btu/hr
R-19 Floor (F.19.2x8.16)	2,121.0	x	0.0491	x	40.0	=	4,164
R-13 Wall (W.13.2x4.16)	1,732.0	x	0.0885	x	40.0	=	6,130
Double Vinyl Window	264.0	x	0.4000	x	40.0	=	4,224
Solid Wood Door	62.0	x	0.3872	x	40.0	=	960
R-38 Roof (R.38.2x4.24)	2,121.0	x	0.0241	x	40.0	=	2,040

Items shown with an asterisk (*) denote conduction through an interior surface to another room.

Page Total: 17,519

Infiltration: 1.00 (Schedule Fraction) x 1.077 (Air Sensible) x 2,121 (Area) x 9.00 (Ceiling Height) x 1.00 (ACH) / 60 x 40 (ΔT) = 13,702

TOTAL HOURLY HEAT LOSS FOR ROOM	31,221

RESIDENTIAL ROOM COOLING LOAD SUMMARY

Project Title

1/19/2005
Date

Room Name 1st Floor

Design Indoor Dry Bulb Temperature: 78°F
Design Outdoor Dry Bulb Temperature: 100°F
Design Temperature Difference: 22°F

Conduction	Area		U-Value		DETD [1]		Btu/hr
R-19 Floor (F.19.2x8.16)	2,121.0	X	0.0491	X	11.0	=	1,145
R-13 Wall (W.13.2x4.16)	1,732.0	X	0.0885	X	19.6	=	3,004
Double Vinyl Window	264.0	X	0.4000	X	22.0	=	2,323
Solid Wood Door	62.0	X	0.3872	X	19.6	=	471
R-38 Roof (R.38.2x4.24)	2,121.0	X	0.0241	X	40.0	=	2,040
		X		X		=	
		X		X		=	
		X		X		=	
		X		X		=	

1. Design Equivalent Temperature Difference (DETD)
Items shown with an asterisk (*) denote conduction through an interior surface to another room.

Page Total 8,983

Solar Gain	Orientation	Shaded Area	SGF	Unshaded Area	SGF	SC	Btu/hr
Window	(North)	(0.0 x	15 +	39.0 x	15) x	0.724 =	423
Window	(East)	(0.0 x	15 +	119.0 x	73) x	0.724 =	6,286
Window	(South)	(0.0 x	15 +	26.0 x	32) x	0.724 =	602
Window	(West)	(0.0 x	15 +	80.0 x	73) x	0.724 =	4,226
		(x	+	x	) x	=	
		(x	+	x	) x	=	
		(x	+	x	) x	=	
		(x	+	x	) x	=	
		(x	+	x	) x	=	
		(x	+	x	) x	=	

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Internal Gain	Sched. Frac.	Area	Heat Gain				Btu/hr
Lights	1.00 x	2,121 x	0.200	Watts/sqft x	3.413	Btuh/Watt =	1,448
Occupants	1.00 x	2,121 x	245	Btuh/occ. /	333	sqft/occ. =	1,560
Receptacle	1.00 x	2,121 x	0.500	Watts/sqft x	3.413	Btuh/Watt =	3,619
Process	1.00 x	2,121 x	0.000	Watts/sqft x	3.413	Btuh/Watt =	0

Infiltration: 1.00 (Schedule Fraction) x 1.077 (Air Sensible) x 2,121 (Area) x 9.00 (Ceiling Height) x 1.00 (ACH) / 60 22 (△T) = 7,536

TOTAL HOURLY SENSIBLE HEAT GAIN FOR ROOM 34,684

Latent Gain	Sched. Frac.	Area	Heat Gain				Btu/hr
Occupants	1.00 x	2,121 x	155	Btuh/occ. /	333	sqft/occ. =	987
Receptacle	1.00 x	2,121 x	0.000	Watts/sqft x	3.413	Btuh/Watt =	0
Process	1.00 x	2,121 x	0.000	Watts/sqft x	3.413	Btuh/Watt =	0

Infiltration: 1.00 (Schedule Fraction) x 4,827 (Air Latent) x 2,121 (Area) x 9.00 (Ceiling Height) x 1.00 (ACH) / 60 -0.00087 (△W) = -1,340

TOTAL HOURLY LATENT HEAT GAIN FOR ROOM -353