

1231 I Street, Sacramento, CA 95814

Insp Area: 2

THE HVAC SYSTEM SHALL COMPLY WITH THE 2005 CALIFORNIA BUILDING ENERGY STANDARDS FOR RESIDENTIAL BUILDINGS.

Phos Bros: 317B5

Site Address: 1404 ATHERTON ST  
Parcel No: 035-0063-002

FIELD VERIFICATION AND DIAGNOSTIC TESTING IS REQUIRED AS SPECIFIED IN THE RESIDENTIAL ACM MANUAL

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

**CONTRACTOR**  
SEA HEATING AND AIR CONDITIONING  
1420 E ROSEVILLE PKWY #140  
ROSEVILLE, CA 95661

**OWNER**  
KELLEY BARNEY D  
1404 ATHERTON ST  
SACRAMENTO, CA 95822

SMOKE DETECTORS ARE REQUIRED WHEN ALTERATIONS, REPAIRS OR ADDITIONS REQUIRING A PERMIT ARE IN EXCESS OF \$1,000 OR WHEN ONE OR MORE SLEEPING ROOMS ARE ADDED OR CREATED (GROUP R)

Nature of Work: INSTALL NEW CUT IN ROOF MOUNT PACKAGE HVAC SYSTEM

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's Address \_\_\_\_\_

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 C-20 License Number 594980 Date 8/16/06 Contractor Signature L Costello

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);

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 \_\_\_\_\_ 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 hereby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

Date 8/16/06 Applicant/Agent Signature L. Costello

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury that 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 EXEMPT Policy Number NO EMPLOYEES 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 8/16/06 Applicant Signature L. Costello

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.



**CITY OF SACRAMENTO**

www.cityofsacramento.org  
 Help Line: 1-916-808-5656 OR 1-866-EZ-PERMIT  
 Inspection Request: 1-916-808-7622

New City Hall  
 915 I Street, 3<sup>rd</sup> Floor  
 Sacramento, CA 95814  
 North Permit Center  
 2101 Arena Blvd., Suite 200  
 Sacramento, CA 95834  
 Fax # 916-808-1901

**MINOR PERMIT APPLICATION**

Date: 8-16-06

*Faxed/web request must be received in this office by 3:00 P.M. to be processed the following workday. Contractors must have a current certificate of Worker's Compensation Insurance. Note: Work started before a Building Permit is issued will be subject to quad fee.*

*Permits requiring Plan Review are not eligible for the MINOR PERMIT PROGRAM. Design Review and Historic Preservation approval may be required if job address is located in those areas (additional forms may be required).*

**IN ORDER TO PROCESS THIS REQUEST, ALL THE FOLLOWING INFORMATION MUST BE PROVIDED:**

Job Address: 1404 Atherton Bldg Type:  RESIDENTIAL  APARTMENTS (4+ units per building)  COMMERCIAL (limited) Contract Price 15,000

**CONTACT INFO Name:**

Property Owner: <u>Barney</u>	Contractor: <u>Craig Seg</u>	License #: <u>594980</u>
Address: <u>1404 Atherton St</u>	Address: <u>1440 E Roseville Pkwy #140</u>	
City/State/Zip: <u>SAC, CA</u>	City/State/Zip: <u>Roseville, CA 95661</u>	
Phone: <u>916-395-1550</u>	Phone: <u>916-783-2256</u>	Fax: _____
Nature of Work: Provide description of work & indicate type of work in selections below.		Pre-Registered? <input type="checkbox"/> YES <input type="checkbox"/> NO
		Registration # _____

Description of Work: INSTALL HVAC

<input type="checkbox"/> Reroof (excluding tile) <input type="checkbox"/> Tear-Off <input type="checkbox"/> Resheet <input type="checkbox"/> House <input type="checkbox"/> Garage # Stories: _____ # Squares: _____ Material: _____ <input type="checkbox"/> Siding <input type="checkbox"/> Wood <input type="checkbox"/> T-111 <input type="checkbox"/> Horiz <input type="checkbox"/> Vinyl <input type="checkbox"/> Stucco	<input type="checkbox"/> HVAC Installations (Residential Only) <input type="checkbox"/> Change-out <input checked="" type="checkbox"/> New <input type="checkbox"/> Heat Pump <input checked="" type="checkbox"/> Package <input type="checkbox"/> Split system <input checked="" type="checkbox"/> Roof mount <input checked="" type="checkbox"/> Cut-in <input type="checkbox"/> Heat pump or elect. unit to gas. <input type="checkbox"/> Wall furnace <input type="checkbox"/> Other (describe below) Value of duct work: <u>5000</u> Equipment: \$ _____ Cut-in: \$ _____	<input type="checkbox"/> Water Heater (Residential Only) <input type="checkbox"/> Electric <input type="checkbox"/> Gas <input type="checkbox"/> Change-out <input type="checkbox"/> Electric to Gas <input type="checkbox"/> Relocate <input type="checkbox"/> New <input type="checkbox"/> Dry Rot or Termitte Damage Repair <input type="checkbox"/> Flooring/Joists <input type="checkbox"/> Mud sill/Studs <input type="checkbox"/> Roof Structure <input type="checkbox"/> Exterior	<input type="checkbox"/> Minor Electric and/or Minor Plumbing (Residential Only) <input type="checkbox"/> Electric Service Change # amps <input type="checkbox"/> New electric circuits <input type="checkbox"/> Re-wire <input type="checkbox"/> Water Service Replacement <input type="checkbox"/> Sewer Service Replacement <input type="checkbox"/> Gas Line Replacement <input type="checkbox"/> Re-plumb <input type="checkbox"/> Water <input type="checkbox"/> Waste	<input type="checkbox"/> Public Utilities Safety Inspection (Residential and single apartment units Only) <input type="checkbox"/> SMUD <input type="checkbox"/> PG&E * NOTE * Correction Notice items will require an additional building permit.
Office Use Only:	Parcel #: <u>033-0063-002</u>	Date Received: <u>8-16</u>	Date Issued: <u>8-16</u>	Permit #: <u>082601</u>
			Processor's Initials: <u>MESH</u>	

0612601

**CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 1 of 8)**

**CF-4R**

**1404 Atherton Street - Sacramento, CA 95822**

**L. Craig Sea / 594980**

Project Address

Contractor Name / License No.

0612601

Contractor Contact

Telephone Permit Number

Laura Costello

916-832-0010 37848

HERS Rater

Telephone Sample Group Number

*Laura R. Costello*  
Certifying Signature

August 21, 2006 CC14-1798378430

Date Certificate Number

Firm: **A/C Girl Heat, Air & H.E.R.S. Rater**

HERS Provider: **CalCERTS**

Street Address: **13389 Folsom Blvd. 300-216**

City/State/Zip: **Folsom / CA / 95630**

**Copies to: Homeowner, HERS Provider and Building Department**

This CF-4R has been registered with the CalCERTS® registry in accordance with the **Title 24 & Title 20** of the CCR. CalCERTS® is an approved HERS provider by the California Energy Commission.

**HERS RATER COMPLIANCE STATEMENT**

The house was  Tested  Approved as part of sample testing, but was not tested.

As the HERS rater providing diagnostic testing and field verification, I certify that the house identified on this form complies with the diagnostic tested compliance requirements as checked on this form. The HERS rater must check and verify that the new distribution system is fully ducted and correct tape is used before a CF-4R may be released on every tested building. The HERS rater must not release the CF-4R until a properly completed and signed CF-6R has been received for the sample and tested buildings.

- The installer has provided a copy of the CF-6R (Installation Certificate).
- New Distribution system is fully ducted (i.e., does not use building cavities as plenums or platform returns in lieu of ducts).
- New systems where cloth backed, rubber adhesive duct tape is installed, mastic and drawbands are used in combination with cloth backed, rubber adhesive duct tape to seal leaks at duct connections.

**MINIMUM REQUIREMENTS FOR DUCT LEAKAGE REDUCTION COMPLIANCE CREDIT:**

<b>NEW CONSTRUCTION</b>			
	Duct Pressurization Test Results (CFM @ 25 Pa)	Measured Values	
1	Enter Tested Leakage Flow in CFM:	N/A	
2	Fan Flow: Calculated (Nominal <input type="radio"/> Cooling <input checked="" type="radio"/> Heating) or <input type="radio"/> Measured Enter Total Fan Flow in CFM:	1519	
3	Pass if Leakage Percentage $\leq 6\% [100 \times (Line 1 / Line 2)]$ :	N/A	N/A
<b>ALTERATIONS: Duct System and/or HVAC Equipment Change-Out</b>			
4	Enter Tested Leakage Flow in CFM from CF-6R: <b>Pre-Test</b> of Existing Duct System Prior to Duct System Alteration and/or Equipment Change-Out.		
5	Enter Tested Leakage Flow in CFM: <b>Final Test</b> of New Duct System or Altered Duct System for Duct System Alteration and/or Equipment Change-Out.	57	
6	Enter Reduction in Leakage for Altered Duct System [Line 4 - Line 5] - (Only if Applicable)		
7	Enter Tested Leakage Flow in CFM to Outside (Only if Applicable)		
8	Entire New Duct System - Pass if Leakage Percentage $\leq 6\% [100 \times (Line 5 / Line 2)]$ :	3.75%	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
<b>TEST OR VERIFICATION STANDARDS: For Altered Duct System and/or HVAC Equipment Change-Out, use one of the following four Test or Verification Standards for compliance:</b>			
9	Pass if Leakage Percentage $\leq 15\% [100 \times (Line 5 / Line 2)]$ :		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
10	Pass if Leakage to Outside Percentage $\leq 10\% [100 \times (Line 7 / Line 2)]$ :		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
11	Pass if Leakage Reduction Percentage $\geq 60\% [100 \times (Line 6 / Line 4)]$ and Verification by Smoke Test and Visual Inspection		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
12	Pass if Sealing of all Accessible Leaks and Verification by Smoke Test and Visual Inspection		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
<b>Pass if One of Lines #9 through #12 pass</b>			<input type="checkbox"/> Pass <input type="checkbox"/> Fail

**Certificate of Compliance Prescriptive Method - HVAC-only Alteration CF-1R-ALT**

Project Title:	Date: <b>8/10/06</b>	© CalCERTS 2005
Project Address: <b>1404 Atherton</b>	Climate Zone: <b>12</b>	Enforcement Agency Use Only
Documentation Author: <b><del>Barrie</del> Barrie</b>	Telephone:	Building Permit #
Company Name: <b>Sea Heat &amp; Air</b>		Plan Check Date
		Field Check Date

**IMPORTANT: This CF-1R-ALT form is only for use when an HVAC-only alteration is made to an existing home. Use one form for each system being altered. This is system # 1 of 1 systems altered in this house.**

**Check all lines that apply. Check only lines that apply.**

**Scope of Alterations:**

1  An Air Handler is to be installed or replaced. Duct sealing to be determined. Continue to next line.

2  A Furnace Heat exchanger is to be installed or replaced. Duct sealing to be determined. Continue to next line.

3  An outdoor condensing unit is to be installed or replaced. Duct Sealing and/or TXV(RCA) to be determined. Continue to next line.

4  A cooling or heating coil is to be installed or replaced. Duct Sealing and/or TXV(RCA) to be determined. Continue to next line.

5  More than 40 feet of new or replacement duct are to be installed in unconditioned space. Duct sealing to be determined.  
 Check here if the entire duct system is also to be new or replaced. Continue to next line.

6  If none of lines 1-5 are checked, neither Duct Sealing nor TXV(RCA) are required. Go to Section 5.

**Section 1 - Duct Sealing (Only if any of Lines 1, 2, 3, 4 or 5 are checked. Skip if Line 6 is checked.)**

7  This system is in Climate Zone 1, 3, 4, 5, 6, 7, or 8. No duct sealing is required. Go to Section 2.

8  This system has less than 40 feet of ducts in unconditioned space. No duct sealing is required. Go to Section 2.

9  This system was previously sealed and tested, and was certified by a HERS rater. No duct sealing is required. Attach previous CF-4R form. Go to Section 2.

10  This duct system is sealed or insulated with asbestos. No duct sealing is required. Go to Section 2.

**Note: If the entire duct system is to be new or replaced, Lines 11-14 do not apply.**

11  In Climate Zones 2, 12 and 16: An 0.92 AFUE furnace will be installed in lieu of duct sealing (and TXV, if applicable).

12  In Climate Zones 10, 13 and 15: An SEER 14 AND EER 12 condenser will be installed with TXV(RCA) AND added duct insulation (R-4 wrap on existing ducts, R-8 new ducts) in lieu of duct sealing. Go to Section 2.

13  In Climate Zones 9, 10, 11, 13, 14, or 15: An SEER 14 AND EER 12 condenser will be installed with TXV(RCA) AND a 0.92 AFUE furnace will be installed in lieu of duct sealing. Go to Section 2.

14  In Climate Zones 2, 9, 11, 12, 14 or 16: An SEER 14 AND EER 12 condenser will be installed with TXV(RCA) AND an 0.82 AFUE furnace will be installed with increased duct insulation in lieu of duct sealing. Go to Section 2.

15  None of lines 7-14 above are checked. Duct Sealing is Required. Continue.

**Section 2 - TXV(RCA) (Only if Lines 3 or 4 are checked, otherwise got to Section 3)**

16  The system being altered is a package unit. No TXV(RCA) is required. Go to Section 3.

17  This system is in Climate Zone 8 and a 14 SEER air conditioner or 0.82 AFUE furnace is being installed. No TXV(RCA) is required. Go to Section 3.

18  This system is in Climate Zone 1, 3, 4, 5, 6, or 7. No TXV(RCA) is required. Go to Section 3.

19  This system is in Climate Zone 16 and line 14 is not checked. No TXV(RCA) is required. Go to Section 3.

20  This system is in Climate Zone 16 and line 14 is checked and not line 16. TXV(RCA) is required. Go to Section 3.

21  This system is in Climate Zone 2 or 8-15 and line 11, 16 or 17 is not checked. TXV(RCA) is required. Go to Section 3.

**Section 3 - HERS Rater verification**

22  If line 15 is checked, HERS verification is required for Duct Sealing.

23  If line 12, 13, 14, 20 or 21 are checked and not line 16 or 17, HERS verification is required for TXV(RCA).

24  If line 12, 13 or 14 are checked, HERS verification is required for 12 EER.

**Section 4 - Equipment Efficiencies**

25  If lines 11, 12, 13, 14 or 17 are checked, upgraded equipment efficiencies are required. List in Section 6.

**Section 5- Duct R-Values**

26  If more than 40 feet of duct is being installed or replaced, duct R-value must meet or exceed Package D requirements.

27  If less than 40 feet of duct is being installed or replaced, duct R-value must meet or exceed R-4.2

Section 6 - see next page

Version 03-10-06

This form can only be used on projects being verified by CalCERTS certified raters.

Page 1 of 2

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**Certificate of Compliance Prescriptive Method - HVAC-only Alteration CF-1R-ALT**

Project Title: <b>Atherton</b>	Date: <b>8/10/06</b>	© CalCERTS 2005
<p><b>IMPORTANT:</b> This CF-1R-ALT form is only for use when an HVAC-only alteration is made to an existing home. Use one form for each system being altered. This is system # <u>1</u> of <u>1</u> systems altered in this house.</p>		
<p><b>Section 6 - Minimum Requirements for Equipment to be Installed/Altered.</b>                  Installed equipment must match type/location and meet or exceed efficiencies/R-values.</p>		
28	Configuration: <input type="checkbox"/> Split system <input checked="" type="checkbox"/> Package Unit	
29 <input type="checkbox"/>	Air Handler <input type="checkbox"/> Gas furnace, AFUE: _____ <input type="checkbox"/> Heatpump FAU <input type="checkbox"/> Hydronic FAU <input type="checkbox"/> Other _____	
30 <input type="checkbox"/>	Heat Exchanger	
31 <input type="checkbox"/>	Outdoor Condensing Unit <input type="checkbox"/> A/C <input type="checkbox"/> Heatpump	Efficiency SEER/HSPF: <b>14</b> EER (if reqd): _____
32 <input type="checkbox"/>	Cooling or heating coil <input type="checkbox"/> A/C <input type="checkbox"/> Heatpump <input type="checkbox"/> Hydronic	
33 <input checked="" type="checkbox"/>	Ducts <b>new</b>	Location: <b>Attic</b> Length (ft): _____ R-value: <b>6</b>
All mandatory measures apply to any altered component. See MF-1R - ALT form.		
<p><b>Compliance Statement:</b>                  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 project responsibility. The undersigned recognizes that compliance using duct sealing, verification of refrigerant charge, and TXV require installer testing and certification and verification by an approved HERS rater.</p>		
<b>Home Owner or Authorized Agent</b>		<b>Documentation Author</b>
Name: <b><del>Barney</del> Barney</b>		Name:
Address: <b>1404 Atherton</b>		Company Name:
City/State/Zip: <b>SAC. CA. 95822</b>		Address:
Phone: <b>916-395-1550</b>		City/State/Zip:
		Phone:
Signature: <i>Barney Kelly</i>		Signature:
<b>Enforcement Agency (Building Department)</b>		<b>Notes/Comments:</b>
Name:		
Title:		
Department:		
Phone #:		
Fax #:		
Signature or Stamp:		
<p><b>Required forms:</b>                  CF-1R-ALT: by anyone. Required at time of permit application. Copies to home owner, enforcement agency, HERS rater.                  CF-6R-ALT: by installing contractor. Required to close permit. Copies to home owner, enforcement agency, HERS rater.                  CF-4R-ALT: by HERS rater. Required to close permit. Copies to home owner, enforcement agency, installer. The CF-4R forms for a sample group shall not be released until all testing and verification is completed and passed for the entire group.</p>		

Project Title: <del>Barnie</del> <b>Barnie</b>		Date: <b>8/19/06</b>	© 2005 CalCERTS		
Project Address: <b>1404 Atherton</b>		Climate Zone: <b>12</b>	Enforcement Agency Use Only		
Installing Contractor: <b>Sea Heat &amp; Air</b>		Telephone: <b>783-2256</b>	Building Permit #		
Company Name: <b>L. Craig Sea</b>			Plan Check Date		
			Field Check Date		
<p><b>IMPORTANT:</b> This CF-6R form is only for use when an HVAC-only alteration is made to an existing home. Use one form for each system being altered. This is system # <u>1</u> of <u>1</u> systems altered in this house.                  Copies to: Homeowner, HERS Rater, and Building Department</p>					
<p>List the specifications for the newly installed equipment. These must match the installed equipment exactly.                  Installed equipment must match type/location and meet or exceed efficiencies/R-values from CF-1R.</p>					
Equipment Type	Manufacturer	Model Number	Efficiency	Load**	Capacity***
Furnace			AFUE		
Heat Exchanger			N/A		
Heat Pump fan coil			N/A		
Hydronic fan coil			N/A		
Other FAU					
Describe					
Package gas/AC	<b>Goodman</b>	<b>GP633607-DIA</b>	AFUE SEER <b>13</b>		
Package heatpump			HSPF SEER EER*		
A/C Condenser			SEER		
Heatpump Condenser			HSPF SEER		
Indoor DX coil			EER*		
Hydronic coil					
<p>* Provide EER if needed for compliance (line 24 of CF-1R-ALT). Installer must provide adequate documentation to verify EER.                  In some cases the specific furnace may need to be verified in order to achieve a specific EER.                  In some cases a time delay relay and/or TXV may need to be verified in order to achieve a specific EER.                  ** Loads are sensible for cooling.                  *** Capacities are sensible at design conditions for cooling and adjusted (altitude, downflow, etc.) output for heating.</p>					
<p>TXV:  <input type="checkbox"/> If TXV is required by the CF-1R form (line 23 on CF-1R-ALT form), it has been installed and access has been provided for visual verification by HERS rater. Sampling is allowed for TXV verification.</p>					
<p>Entirely New Duct System: (Line 5 of CF-1R ALT)  <input checked="" type="checkbox"/> For Entirely new duct systems, the required leakage is 6% rather than 15% for altered systems. The alternative to duct sealing by increasing the efficiency of the equipment is not an option for entirely new duct systems.</p>					
<p>I, the undersigned, verify that the equipment listed above is: 1) the actual equipment installed in the home; 2) equal to or more efficient than required by the Certificate of Compliance (CF-1R-ALT Form); and 3) equipment that meets or exceeds the appropriate requirements for manufactured devices (Appliance Efficiency Standards), where applicable.                  I, the undersigned, verify that diagnostic test results listed on this form were performed in conformance with the requirements for compliance and that the newly installed or retrofitted mechanical system components conform with the Mandatory requirements specified in Section 150(m) of the 2005 Building Energy Efficiency Standards.</p>					
Signed (Installer): <b>222</b>		Date: <b>8/19/06</b>			
Notes:					

Project Title: <b>Atherton</b>		Date: <b>5/19/06</b>	© 2005 CalCERTS
<b>IMPORTANT: This CF-6R form is only for use when an HVAC-only alteration is made to an existing home. Use one form for each system being altered. This is system # <u>1</u> of <u>1</u> systems altered in this house. Copies to: Homeowner, HERS Rater, and Building Department</b>			
<b>Duct Leakage test Results (If duct testing is required per CF-1R-ALT form)</b>			
Step 1 - Pre-test: Leakage of the system before any alterations. This test is optional and is only used for the 60% reduction option			
1	Pre-test leakage:	CFM25	
2	Line 1 x 0.4 =		target for 60% reduction
Step 2 - Determine Total System Fan Flow: Use any of these methods. Use values for equipment after alterations.			
3	Cooling: Condenser tonnage: <b>3</b> tons x 400 CFM/ton =	<b>1200</b>	CFM
4	Heating: Furnace output: <b>70,000</b> Btuh x .0217 CFM/Btuh =	<b>1519</b>	CFM
5	Measured: (refer to ACM Manual Appendix RE, section 4.1) =		CFM
6	Measurement method: <input type="checkbox"/> flow hood <input type="checkbox"/> plenum pressure matching <input type="checkbox"/> flow grid		
7	Total system fan flow value to be used:	<b>1519</b> CFM	may use highest of lines 3, 4, or 5.
Step 3 - Determine Targets:			
8a	Total System fan flow (line 7 from above) x 0.06 =	<b>91.14</b>	CFM25 = 6% leakage target (new duct systems)
8b	Total System fan flow (line 7 from above) x 0.15 =		CFM25 = 15% leakage target
9	Total System fan flow (line 7 from above) x 0.10 =		CFM25 = 10% leakage to outside target
Step 4 - Alterations: Must be consistent with the CF-1R form.			
10	<input checked="" type="checkbox"/> Seal all new connections with approved materials.		
11	<input checked="" type="checkbox"/> No newly constructed portions of the system can have unducted building cavities to convey system air.		
12	<input checked="" type="checkbox"/> If adding or replacing more than 40 feet of duct, insulate new ducts per package D for that climate zone		
Step 5 - Final Leakage (regular duct leakage test, for 15% total and 60% reduction)			
13	leakage =	CFM25	refer to 2005 ACM appendix RC, Sections RC 4.3.1
14a	<input type="checkbox"/> If line 13 is less than line 8a, house passes the 6% leakage requirement. Go to Step 9.		
14b	<input type="checkbox"/> If line 13 is less than line 8b, house passes the 15% leakage requirement. Go to Step 9.		
15	<input type="checkbox"/> If line 13 is less than line 2, house passes the 60% reduction requirement, continue.		
16	<input type="checkbox"/> If either of lines 14a, 14b or 15 are checked, HERS verification is required. Sampling can be used.		
17	<input type="checkbox"/> If line 15 is checked, but not 14a or 14b, Smoke Test and Visual Inspection of Accessible Duct Sealing is required. Go to Step 8		
Step 6 - Leakage to Outside: Similar to a regular duct blaster test but the house is pressurized to 25 pascals at the same time.			
18	leakage =	CFM25	refer to 2005 ACM appendix RC, Sections RC 4.3.3
19	<input type="checkbox"/> If line 18 is less than line 9, house passes the 10% leakage to outside requirement.		
20	<input type="checkbox"/> If line 19 passes, HERS verification is required. Sampling can be used.		
Step 7 - If the house does not pass any of lines 14, 15 or 19.			
21	<input type="checkbox"/> Smoke Test and Visual Inspection of Accessible Duct Sealing is required. See Step 8.		
22	<input type="checkbox"/> Install required label per ACM Appendix RC, Sections RC 4.3.5.		
Step 8 - Smoke Test and Visual Verification (See 2005 Residential ACM Appendix RC, Sections RC 4.3.5-7)			
23	<input type="checkbox"/> Perform smoke test per ACM Appendix RC, Sections RC 4.3.6.		
24	<input type="checkbox"/> Perform Visual Inspection and repair of excessively damaged ducts per ACM Appendix RC, Sections RC 4.3.7.		
25	<input type="checkbox"/> Seal register boots to surrounding material per ACM Appendix RC, Sections RC 4.3.7.		
<b>HERS Verification</b>			
26	<input type="checkbox"/> If line 14 is checked. 15% leakage to be verified by HERS rater. Sampling is allowed.		
27	<input type="checkbox"/> If line 15 is checked. 60% leakage reduction to be verified by HERS rater (post test only) AND Smoke Test and Visual Verification to be performed by HERS Rater. Sampling is allowed.		
28	<input type="checkbox"/> If line 19 is checked. 10% leakage to outside to be verified by HERS rater. Sampling is allowed.		
29	<input type="checkbox"/> If none of lines 14, 15 or 19 are checked Smoke Test and fix all accessible leaks. No sampling allowed.		
Sampling - Only if house passes on lines 14, 15 or 19.			
30	<input type="checkbox"/> 1.) Homeowner chooses to be put into a group of homes for random third party HERS sampling. 2.) Homeowner, installer and rater must sign the three-party agreement. 3.) All above tests must be completed by the installer or their representative, not the third party rater.		
No Sampling - House does not pass by lines 14, 15 or 19; OR homeowner chooses not to be part of a sample group			
31	<input type="checkbox"/> 1.) House to be tested by a third party HERS rater selected by installer. 2.) Homeowner, installer and rater must sign the three-party agreement. 3.) All above tests may be completed by the installer or their representative, and then verified by a third party rater. OR, all above tests may be performed solely by the third party rater.		
32	<input checked="" type="checkbox"/> 1.) House to be tested by third party HERS rater selected by homeowner. 2.) All above tests may be completed by the installer or their representative, and then verified by a third party rater. OR, all above tests may be performed solely by the third party rater.		