

TRANSMISSION VERIFICATION REPORT

TIME : 10/03/2006 14:31
 NAME : CITY OF SACRAMENTO
 FAX : 9168085543
 TEL : 9168085656
 SER.# : BROH4J832840

DATE, TIME 10/03 14:30
 FAX NO./NAME 93812839
 DURATION 00:00:49
 PAGE(S) 02
 RESULT OK
 MODE STANDARD
 EQM

*Pacific
H/A*

**CITY OF SACRAMENTO
 CASHIER'S WORKSHEET**

**ISSUED
 CITY OF SACRAMENTO
 OCT 03 2006
 DOWNTOWN PERMIT
 CENTER**

RECEIPT NUMBER: R0618225
 TRANSACTION DATE: 10/03/2006
 TRANSACTION AMOUNT: 189.72
 NOTATION:

APD #: **0615328**
 SITE ADDRESS: 4945 CRESTWOOD WY SAC
 PARCEL: 016-0233-002

TYPE: Bldg Minor Permit
 SUB-TYPE: RES
 HOUSING: N
 STATUS: **ISSUED**

Mixed Income Housing
 Fee Program
 ??

TRANSACTION LIST

Type	Method	Description	Pymt Amount
Payment	Credit C	TEETER	189.72

RECEIPT ACCOUNT ITEM LIST

Class #	Description	Item #	Total Fee	Prev Pymt	Current Pymt
200	Permit--Building-Res	1100	175.00	.00	175.00
206	City Business Oper Tax	1730	3.00	.00	3.00
213	General Plan Surcharge	1760	4.72	.00	4.72
259	Bldg-Technology Surcharg	1750	7.00	.00	7.00



FAXBACK PERMIT APPLICATION

(certain restrictions apply)

Faxed request received in this office before 3:00 p.m. will be processed the following work day.
 Contractors must have a current certificate of Worker's Compensation Insurance.
 Work started before a Building Permit is issued will be subject to quad fees.

Permits requiring plan review are not eligible for FAXBACK

0615328

Fax # (916) ~~381-1901~~
 808-1901

RESIDENTIAL APARTMENTS (4+ units per building) COMMERCIAL (limited)

In order to process this request, ALL of the following information MUST be provided:

Job Address: 4945 Crestwood Way Unit # _____
 Parcel Number: _____
 CONTACT PERSON: EMME - P.H. & R.E.
 Property Owner: LARRY BAKER
 Address: 4945 Crestwood Way
 City/State/Zip: SAC, CA 95823
 Phone: 916-448-1468
 CONTRACT PRICE: \$7500
 CONTACT PHONE: 916-381-8510
 Contractor: Pacific Heat & Air License # 702888
 Address: 3317 Dillard Dr. 848
 City/State/Zip: SAC, CA 95826
 Phone: 916-381-8510 FAX: 916-381-2839

NATURE OF WORK: (Provide detailed description of work & indicate type of work in selections below.)

Description of Work: HVAC Change out M+E only

<input type="checkbox"/> REROOF (excluding tile) <input type="checkbox"/> TEAR-OFF <input type="checkbox"/> RESHEET <input type="checkbox"/> HOUSE # SQUARES # Stories: 1 2 3+ Material: _____	<input checked="" type="checkbox"/> HVAC INSTALLATIONS (Residential ONLY) <input type="checkbox"/> NEW <input type="checkbox"/> CHANGE-OUT <input type="checkbox"/> Heat Pump <input type="checkbox"/> Package <input checked="" type="checkbox"/> Split system <input type="checkbox"/> Roof mount <input type="checkbox"/> Cut-in <input type="checkbox"/> Heat pump or elect. unit to gas. <input type="checkbox"/> Wait furnace <input type="checkbox"/> Fire Place Insert <input type="checkbox"/> Other (describe below) Value of duct work: \$ _____ Equipment: \$ _____ Cut-in: \$ _____	<input type="checkbox"/> WATER HEATER <input type="checkbox"/> GAS <input type="checkbox"/> ELECTRIC <input type="checkbox"/> Change-out <input type="checkbox"/> Electric In Gas <input type="checkbox"/> Relocate <input type="checkbox"/> New <input type="checkbox"/> DRY ROT OR TERMITES DAMAGE REPAIR <input type="checkbox"/> Flooring/Joists <input type="checkbox"/> Roof Structure <input type="checkbox"/> Exterior <input type="checkbox"/> Mud/sill/Studs <input type="checkbox"/> Mud/sill/Studs <input type="checkbox"/> Exterior <input type="checkbox"/> PUBLIC UTILITIES SAFETY INSPECTION (Residential and single apartment units ONLY) <input type="checkbox"/> SNUJD <input type="checkbox"/> PG&E	<input type="checkbox"/> MINOR ELECTRICAL and/or MINOR PLUMBING <input type="checkbox"/> Electric Service Change # amps <input type="checkbox"/> New electric circuits <input type="checkbox"/> Re-wire <input type="checkbox"/> Replacement <input type="checkbox"/> Water Service <input type="checkbox"/> Sewer Service <input type="checkbox"/> Gas Line <input type="checkbox"/> Re-plumb <input type="checkbox"/> Water <input type="checkbox"/> Waste
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* Design Review approval may be required.

* NOTE: Correction Notice items will require an additional building permit.

NR Faxback Permit updated 12/09/01

City of Sacramento



PLANNING BUILDING DEPARTMENT BUILDING DIVISION (916) 808-BLDG (2534)

Building Permit

***** Office Use Only ***** ISSUED *****

Permit No: 0615328 CITY OF SACRAMENTO Date Issued: OCT 03 2006 Total Amount: 189.72

DOWNTOWN PERMIT CENTER

***** Please Fill in the Following *****

Site Address: 4945 Crestwood Way Name of Work: HVAC Change out

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 C20 License Number 702888 Date 9-28-06 Signature [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 3 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 Professions 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 9-28-06 Applicant/Agent Signature [Signature]

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

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.

X 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 State Fund Policy Number 713-02-00872 Expiration Date 01-01-07

(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 9-28-06 Applicant Signature [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.

HEATING AND COOLING EQUIPMENT QUESTIONNAIRE

Applicant's name: Pacific Heat & Air Phone: 916-381-8510

Project Address: _____

Please check the appropriate boxes. Only check a box if it accurately and completely describes your proposed work, otherwise leave boxes blank.

1. GROUND-MOUNTED UNIT

- a. There is an existing ground-mounted unit.
 - The existing unit shall be removed. The new unit shall be placed in the same location as the existing unit and shall not exceed the size of the existing unit by more than 25%.
 - The new unit differs in location from the existing unit.
 - The new unit is fully screened behind a solid fenced area and will not be visible from any street views.
 - Existing shrubs or buildings will screen the unit from being visible from any street views.
- b. There is no unit in the proposed location.
 - The new unit will be fully screened behind a solid fenced area and will not be visible from any street views.
 - Existing shrubs or buildings will screen the unit from being visible from any street views.

2. ROOF-MOUNTED UNIT

- a. There is an existing roof-mounted unit.
 - The existing unit shall be removed. The new unit shall be placed in the same location as the existing unit and shall not exceed the size of the existing unit by more than 25%.
 - The new unit differs in location from the existing unit. The new unit shall be screened from street views by the building with no portion of the new unit being visible from any street views.
- b. There is no existing roof-mounted unit.
 - The new unit shall be screened from street views by the building with no portion of the new unit being visible from any street views.

By signing below, the applicant certifies that this form accurately describes the proposed work.

Applicant's signature: *E. J. [Signature]* Date: 9-28-06

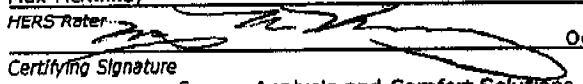
For City Staff use only Counter Staff _____

- In a DR District Meets DR criteria? Yes No (route to DR staff)
- In a P area or listed (route to P staff)
- Not in DR/P area

S:\USERS\j\m\procedures\ChecklistMopch.wpd

TOTAL P.03

CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 1 of 8) 0615328 CF-4R

4945 Crestwood Way - Sacramento, CA 95822		Pacific Heat & Air, Inc. / 702888	
Project Address		Contractor Name / License No.	
		06-15328	
Contractor Contact		Telephone	Permit Number
Max McKinney		916-698-4185	44701
HERS Rater		Telephone	Sample Group Number
		October 26, 2006	CC14-1798385289
Certifying Signature		Date	Certificate Number
Firm: Energy Analysis and Comfort Solutions, Inc.		HERS Provider: CalCERTS	
Street Address: PO Box 2233		City/State/Zip: Orangevale / CA / 95662	

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:

NEW CONSTRUCTION			
	Duct Pressurization Test Results (CFM @ 25 Pa)	Measured Values	
1	Enter Tested Leakage Flow in CFM:	N/A	
2	Fan Flow: Calculated (Nominal <input checked="" type="radio"/> Cooling <input checked="" type="radio"/> Heating) or <input type="radio"/> Measured Enter Total Fan Flow in CFM:	Not Tested	
3	Pass If Leakage Percentage < 6% [100 x (Line 1 / Line 2)]:	N/A	N/A
ALTERATIONS: Duct System and/or HVAC Equipment Change-Out			
4	Enter Tested Leakage Flow in CFM from CF-6R: Pre-Test of Existing Duct System Prior to Duct System Alteration and/or Equipment Change-Out.	Not Tested	
5	Enter Tested Leakage Flow in CFM: Final Test of New Duct System or Altered Duct System for Duct System Alteration and/or Equipment Change-Out.	Not Tested	
6	Enter Reduction in Leakage for Altered Duct System [Line 4 - Line 5] - (Only if Applicable)	Not Tested	
7	Enter Tested Leakage Flow in CFM to Outside (Only if Applicable)	Not Tested	
8	Entire New Duct System - Pass if Leakage Percentage < 6% [100 x (Line 5 / Line 2)]:	Not Tested	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
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:			
9	Pass If Leakage Percentage <= 15% [100 x (Line 5 / Line 2)]:	Not Tested	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
10	Pass If Leakage to Outside Percentage <= 10% [100 x (Line 7 / Line 2)]:	Not Tested	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
11	Pass If Leakage Reduction Percentage >= 60% [100 x (Line 6 / Line 4)] and Verification by Smoke Test and Visual Inspection	Not Tested	<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
Pass if One of Lines #9 through #12 pass			<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

https://www.calcerts.com/cf4r/print_certificate.cfm?lots=0,44701,44707,44704,44703,44705,44... 10/28/2006

CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 3-4 of 8)

CF-4R

4945 Crestwood Way - Sacramento, CA 95822		Pacific Heat & Air, Inc. / 702888	
<i>Project Address</i>		<i>Contractor Name / License No.</i>	
		05-15328	
Max McKinney		916-698-4185	44701
<i>Contractor Contact</i>		<i>Telephone</i>	<i>Permit Number</i>
[Signature]		October 26, 2006	CC14-1798385289
<i>HERS Rater</i>		<i>Telephone</i>	<i>Sample Group Number</i>
[Signature]			
<i>Certifying Signature</i>		<i>Date</i>	<i>Certificate Number</i>
Energy Analysis and Comfort Solutions, Inc.	HERS Provider: CalCERTS		
PO Box 2233	City/State/Zip: Orangevale / CA / 95662		
<i>Firm:</i>	<i>Street Address:</i>		

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 installer has provided a copy of the CF-6R (Installation Certificate).

THERMOSTATIC EXPANSION VALVE (TXV):

Access is provided for inspection. The procedure shall consist of visual verification that the TXV is installed on the system and installation of the specific equipment shall be verified.

HVAC System TXV Pass Fail

https://www.calcerts.com/cf4r_print_certificate.cfm?lots=0,44701,44707,44704,44703,44705,44... 10/28/2006

INSTALLATION CERTIFICATE

4945 Crestwood Way

Sacramento

CA

95822

Site Address

Permit Number:

0615328

An installation certificate is required to be posted at the building site or made available for all appropriate inspections. (The information provided on this form is required) After completion of final inspection, a copy must be provided to the building department (upon request) and the building owner at occupancy, per Section 10-103(a).

HVAC SYSTEMS:

Heating Equipment

Equip. Type (pkg. heat)	CEC Certified Mfg. Name, Model, and Serial No.	# of Identical Systems	Efficiency (AFUE, etc) ¹ >(CF-1R value)	Duct Location	Duct or Piping R-Value	Heating Load (kBtu/hr)	Heating Capacity (kBtu/hr)
Split	TRANE	1	80.00 AFUE	Attic	4		80
Furnace	Tud080r9v4						

Cooling Equipment

Equip. Type (pkg. heat pump)	CEC Certified Mfg. Name, Model, and Serial No.	# of Identical Systems	Efficiency (AFUE, etc) ¹ >(CF-1R value)	Duct Location	Duct or Piping R-Value	Cooling Load (kBtu/hr)	Cooling Capacity (kBtu/hr)
Split		1	14.50 SEER	Attic	4		42
A/C	4TRX4042		12 EER				
Coil	ADP						
	TE5060						

1. > symbol reads greater than or equal to what is indicated on the CF-1R value. Include both SEER and EER if compliance credit for high EER air conditioner is claimed.

II, the undersigned, verify that equipment listed above is: 1) is the actual equipment installed, 2) equivalent to or more efficient than that specified in the certificate of compliance (Form CF-1R) submitted for compliance with the Energy Efficiency Standards for residential buildings, and 3) equipment that meets or exceeds the appropriate requirements for manufactured devices (from the Appliance Efficiency Regulations or Part 6), where applicable.

Signature and Date

COPY TO: Building Department

HERS Rater (if applicable)

Building Owner at Occupancy

Pacific Heat & Air, Inc.

Installing Subcontractor (Co. Name)

OR General Contractor (Co. Name) OR Owner

48

5024-8

4945 Crestwood Way

Sacramento

CA

95822

Site Address

Permit Number:

INSTALLER COMPLIANCE STATEMENT FOR DUCT LEAKAGE

Copies to: Builder, HERS Rater, Building Owner at Occupancy and Building Department

INSTALLER COMPLIANCE STATEMENT

The building was: Tested at Final Tested at Rough-in

INSTALLER VISUAL INSPECTION AT FINAL CONSTRUCTION STAGE:

- Remove at least one supply and one return register, and verify that the spaces between the register boot and the interior finishing wall are properly sealed.
- If the house rough-in duct leakage test was conducted without an air handler installed, inspect the connection points between the air handler and the supply and return plenums to verify that the connection points are properly sealed.
- Inspect all joints to ensure that no cloth backed rubber adhesive duct tape is used

DUCT LEAKAGE REDUCTION

Procedures for field verification and diagnostic testing of air distribution systems are available in RACM, Appendix RC4.3

NEW CONSTRUCTION:		Measured Values	
Duct Pressurization Test Results (CFM @ 25 Pa)			
1	Enter Tested Leakage Flow in CFM:		
2	Fan Flow: Calculated (Nominal: <input type="checkbox"/> Cooling <input type="checkbox"/> Heating) or <input type="checkbox"/> Measured If Fan Flow is Calculated as 400 cfm/ton x number of tons or as 21.7 cfm/(kBtu/hr) x Heating Capacity in Thousands of Btu/hr, enter total calculated or measured fan flow in CFM here:		
3	Pass if Leakage Percentage < 6% for Final or < 4% at Rough-in: {100 x [_____ (Line #1) / _____ (Line #2)]}		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
ALTERATIONS: Duct System and/or HVAC Equipment Change-Out			
4	Enter Tested Leakage Flow in CFM from Pre-Test of Existing Duct System Prior to Duct System Alteration and/or Equipment Change-Out.		
5	Enter Tested Leakage Flow in CFM from Final Test of New Duct System or Altered Duct System for Duct System Alteration and/or Equipment Change-Out.		
6	Enter Reduction in Leakage for Altered Duct System { _____ (Line #4) Minus _____ (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 < 6% for Final or < 4% at Rough-In {100 x [_____ (Line #5) / _____ Line #2]}		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
TEST OR VERIFICATION STANDARDS: For Altered Duct System and/or HVAC Equipment Change-Out			
9	Pass if Leakage Percentage < 15% {100 x [_____ (Line #5) / _____ Line #2]}		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
10	Pass if Leakage to Outside Percentage < 10% {100 x [_____ (Line #7) / _____ Line #2]}		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
11	Pass if Leakage Reduction Percentage > 60% {100 x [_____ (Line #6) / _____ Line #4]}		<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
Pass if One of Lines # 9 through # 12 pass			<input type="checkbox"/> Pass <input type="checkbox"/> Fail

_____, the undersigned, verify that the above diagnostic test results were performed in conformance with the requirements for compliance credit. I, the undersigned, also certify that the newly installed or retrofit Air-Distribution System Ducts, Plenums and Fans comply with Mandatory requirements specified in Section 160 (m) of the 2005 Building Energy Efficiency

Pacific Heat & Air, Inc.

Signature _____ Date _____ Installing Subcontractor (Co. Name) OR General Contractor (Co. Name) _____ 48 5024-8

4945 Crestwood Way

Sacramento

CA

95822

Site Address

Permit Number:

THERMOSTATIC EXPANSION VALVE (TXV)

Procedures for field verification of thermostatic expansion valves are available in RACM, Appendix RI.

<input type="checkbox"/> Yes	<input type="checkbox"/> No	Access is provided for inspection. The procedure shall consist of visual verification that the TXV is installed on the system and installation of the specific equipment shall be verified.		
		Yes is a Pass	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail

REFRIGERANT CHARGE MEASUREMENT PROCEDURE

Verification for Required Refrigerant Charge and Adequate Airflow for Split System Space Cooling Systems without Thermostatic

Expansion Valves

Outdoor Unit Serial #	
Location	
Outdoor Unit Make	
Outdoor Unit Model	
Cooling Capacity	Btu/hr
Date of Verification	
Date of Refrigerant Gauge Calibration	(must be checked monthly)
Date of Thermocouple Calibration	(must be checked monthly)

Standard Charge Measurement Procedure (outdoor air dry-bulb 55oF and above):

Procedures for Determining Refrigerant Charge using the Standard Method are available in RACM, Appendix RD2.

Note: The system should be installed and charged in accordance with the manufacturer's specifications before starting this

Measured Temperatures

Supply (evaporator leaving) air dry-bulb temperature (Tsupply, db)		F
Return (evaporator entering) air dry-bulb temperature (Treturn, db)		F
Return (evaporator entering) air wet-bulb temperature (Treturn, wb)		F
Evaporator saturation temperature (Tevaporator, sat)		F
Suction line temperature (Tsuction, db)		F
Condenser (entering) air dry-bulb temperature (Tcondenser, db)		F

Superheat Charge Method Calculations for Refrigerant Charge

Actual Superheat = Tsuction, db - Tevaporator, sat		F
Target Superheat (from Table RD-2)		F
Actual Superheat - Target Superheat (System passes if between -5 and +5°F)		F

Temperature Split Method Calculations for Adequate Airflow

Split Method Calculation is not necessary if Adequate Airflow credit is taken

Actual Temperature Split = T return, db - Tsupply, db		F
Target Temperature Split (from Table RD3)		F
Actual Temperature Split - Target Temperature Split (System passes if between -3°F and +3°F or, upon remeasurement, if between -3°F and -10°F)		F

4945 Crestwood Way
Site Address

Sacramento

CA

95822

Permit Number:

Standard Charge Measurement Summary:

System shall pass both refrigerant charge and adequate airflow calculation criteria from the same measurements. If corrective actions were taken, both criteria must be remeasured and recalculated.

Yes No System Passes

Alternate Charge Measurement Procedure (outdoor air dry-bulb below 55 oF)

Note: The system should be installed and charged in accordance with the manufacturer's specifications and installer verification shall be documented on CF-6R before starting this procedure. If outdoor air dry-bulb is 55 oF or above, installer shall use the Standard Charge Measure Procedure:

Procedures for Determining Refrigerant Charge using the Alternate Method are available in RACM, Appendix RD3.

Actual liquid line length:		ft
Manufacturer's Standard liquid line length:		ft
Difference (Actual - Standard):		ft
Manufacturer's correction (ounces per foot) _____ x difference in length = _____ ounces (+ = add) (- = remove)		

Measured Airflow Method for Adequate Airflow Verification available in RACM, Appendix

Calculated Airflow: Cooling Capacity (Btu/hr) _____ X 0.033 (cfm/Btu-hr) _____ CFM
Measured Airflow is _____ CFM (Measured airflow must be greater than the calculated

Alternate Charge Measurement Summary:

System shall pass both refrigerant charge and adequate airflow calculation criteria from the same measurements. If corrective actions were taken, both criteria must be remeasured and recalculated.

Yes No System Passes

Signature, Date

Pacific Heat & Air, Inc.

Installing Subcontractor (Co. Name) OR
General Contractor (Co. Name) OR Owner

COPY TO: Building Department
HERS Rater (if applicable)
Building Owner at Occupancy

48

5024-8

4945 Crestwood Way

Sacramento

CA

95822

Site Address

Permit Number:

FAN WATT DRAW

Procedures for measuring the air handler watt draw are available in RACM, Appendix RE3.2.

Method For Fan Watt Draw Measurement			
<input type="checkbox"/>	<input type="checkbox"/>	RE3.2.1	Portable Watt Meter Measurement
<input type="checkbox"/>	<input type="checkbox"/>	RE3.2.2	Utility Revenue Meter Measurement
		Measured Fan watt Draw:	Enter results of Watts/cfm:
		Measured Fan Flow (Enter total cfm from airflow verification)	
			Enter results of Watts/cfm:
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Calculated fan watt/cfm is equal to or lower than the fan watt/cfm draw documented in CF-1R	
		Yes is a pass	<input type="checkbox"/> Pass <input type="checkbox"/> Fail

ADEQUATE AIRFLOW VERIFICATION

Procedures for field verification and diagnostic testing of adequate airflow are available in RACM, Appendix RE4.1.

Method For Airflow Measurement			
<input type="checkbox"/>	<input type="checkbox"/>	Yes	No
		Duct design exists on plans	
<input type="checkbox"/>	<input type="checkbox"/>	RE4.1.1	Diagnostic Fan Flow Using Flow Capture Hood
<input type="checkbox"/>	<input type="checkbox"/>	RE4.1.2	Diagnostic Fan Flow Using Plenum Pressure Matching
<input type="checkbox"/>	<input type="checkbox"/>	RE4.1.3	Diagnostic Fan Flow Using Flow Grid Measurement
		Measured Airflow:	_____ cfm/ton
<input type="checkbox"/>	<input type="checkbox"/>	Yes	No
		Measured airflow is greater than the criteria in Table RE-2	
		Pass	Fail

MAXIMUM COOLING CAPACITY

Procedures for determining maximum cooling load capacity are available in RACM, Appendix RF3.

1	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	Adequate airflow verified (see adequate airflow credit)
2	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	Refrigerant charge or TXV
3	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	Duct Leakage reduction credit verified
4	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	Cooling capacities of installed systems are ≤ to maximum cooling capacity indicated on the Performance's CF-1R and RF-3.
5	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	If the cooling capacities of installed systems are > than maximum cooling capacity in the CF-1R, then the electrical input for the installed systems must be ≤ to electrical input in the CF-1R.
					Yes to 1, 2, and 3; and Yes to either 4 or 5 is a pass
					<input type="checkbox"/> Pass <input type="checkbox"/> Fail

HIGH EER AIR CONDITIONER

Procedures for verification are available in RACM, Appendix RI.

1	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	EER values of installed systems match the CF-1R For split system, indoor coil is matched to outdoor coil Time Delay Relay Verified (If Required)
2	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	
3	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	
					Yes to 1 and 2; and 3 (If Required) is a pass
					<input type="checkbox"/> Pass <input type="checkbox"/> Fail

 Tests Performed Signature / Date

 Pacific Heat & Air, Inc.
 Installing Subcontractor (Co. Name) OR
 General Contractor (Co. Name)

CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 1 of 8) CF-4R

4945 Crestwood Way - Sacramento, CA 95822 <small>Project Address</small>	Pacific Heat & Air, Inc. / 702888 <small>Contractor Name / License No.</small>
Max McKinney <small>Contractor Contact</small>	916-698-4185 <small>Telephone</small>
 <small>Contractor Signature</small>	44701 <small>Permit Number</small>
October 26, 2006 <small>HERS Rater Date</small>	CC14-1798385289 <small>Sample Group Number</small>
Energy Analysis and Comfort Solutions, Inc. <small>Firm</small>	HERS Provider: CalCERTS
PO Box 2233 <small>Street Address</small>	Orangethe / CA / 95662 <small>City/State/Zip</small>

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:

NEW CONSTRUCTION		
Duct Pressurization Test Results (CFM @ 25 Pa)	Measured Values	
1 Enter Tested Leakage Flow in CFM:	N/A	
2 Fan Flow: Calculated (Nominal <input checked="" type="radio"/> Cooling <input checked="" type="radio"/> Heating) or <input type="radio"/> Measured Enter Total Fan Flow in CFM:	Not Tested	
3 Pass If Leakage Percentage <= 6% [100 x (Line 1 / Line 2)]:	N/A	N/A
ALTERATIONS: Duct System and/or HVAC Equipment Change-Out		
4 Enter Tested Leakage Flow in CFM from CF-6R: Pre-Test of Existing Duct System Prior to Duct System Alteration and/or Equipment Change-Out.	Not Tested	
5 Enter Tested Leakage Flow in CFM: Final Test of New Duct System or Altered Duct System for Duct System Alteration and/or Equipment Change-Out.	Not Tested	
6 Enter Reduction in Leakage for Altered Duct System [Line 4 - Line 5] - (Only if Applicable)	Not Tested	
7 Enter Tested Leakage Flow in CFM to Outside (Only if Applicable)	Not Tested	
8 Entire New Duct System - Pass If Leakage Percentage <= 6% [100 x (Line 5 / Line 2)]:	Not Tested	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
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:		
9 Pass If Leakage Percentage <= 15% [100 x (Line 5 / Line 2)]:	Not Tested	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
10 Pass If Leakage to Outside Percentage <= 10% [100 x (Line 7 / Line 2)]:	Not Tested	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
11 Pass If Leakage Reduction Percentage >= 60% [100 x (Line 6 / Line 4)] and Verification by Smoke Test and Visual Inspection	Not Tested	<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
Pass If One of Lines #9 through #12 pass		<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

<https://www.calcerts.com/cf4r print certificate.cfm?lots=0,44701,44707,44704,44703,44705,44...> 10/28/2006

CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 3-4 of 8)

CF-4R

4945 Crestwood Way - Sacramento, CA 95822

Pacific Heat & Air, Inc. / 702888

Project Address

Contractor Name / License No.

06-15328

Contractor Contact

Telephone

Permit Number

Max McKinney

916-698-4185

44701

HERS Rater

Telephone

Sample Group Number

October 26, 2006

CC14-1798385289

Certifying Signature

Date

Certificate Number

Firm:

Energy Analysis and Comfort Solutions, Inc.

HERS Provider: CalCERTS

Street Address:

PO Box 2233

City/State/Zip: Orangevale / CA / 95662

Copies to: Homeowner, HERS Provider and Building Department

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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 installer has provided a copy of the CF-6R (Installation Certificate).

THERMOSTATIC EXPANSION VALVE (TXV):

Access is provided for inspection. The procedure shall consist of visual verification that the TXV is installed on the system and installation of the specific equipment shall be verified.

HVAC System TXV

Pass Fail

https://www.calcerts.com/cf4r_print_certificate.cfm?lots=0,44701,44707,44704,44703,44705,44... 10/28/2006