

CITY OF SACRAMENTO
New City Hall, 915 I St., 3rd Floor, Sacramento, CA 95814

Permit No: 0615321
Insp Area: 4
Thos Bros: 257D6

Site Address: 4950 ALTERRA WY SAC
Parcel No: 225-1670-009

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

PAID
CITY OF SACRAMENTO
OCT 04 2006
NEW CITY HALL

CONTRACTOR
COMFORT MASTER
312 20TH STREET
SACRAMENTO, CA 95814

OWNER
THOMAS SHIRLEY M/WILLIAM A
4950 ALTERRA WAY
SACRAMENTO, CA 95835

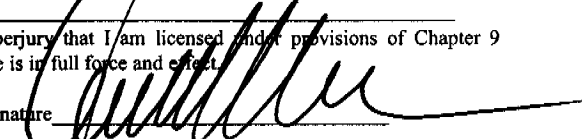
ARCHITECT

Nature of Work: HVAC-- C/O, SPLIT SYSTEM--**HVAC system shall comply with 2005 California Building Energy Standards for residential buildings; field verification & diagnostic testing is required as specified in the Residential ACM Manual

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 306797 Date 3 Oct 06 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);

____ 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.)

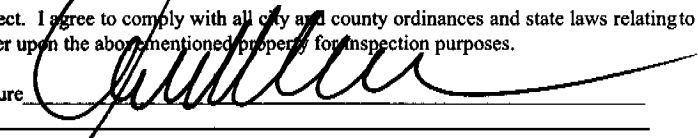
____ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s)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

Date 3 Oct 06 Applicant/Agent 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.

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 AU INSURANCE SRVICES Policy Number 005-00010527 Exp Date 06/01/2007

____ (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 3 Oct 06 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.

CITY OF SACRAMENTO
PLANNING & BUILDING DEPARTMENT
BUILDING DIVISION
www.cityofsacramento.org

Permit Line: 1-916-264-6807 UH 1-866-EZ-PERMIT
Inspection: 1-916-808-4677

Downtown Permit Center 1-916-264-6807 North Permit Center 1-916-908-2354
1231 J Street, Suite 200, Sacramento, CA 95814 2101 Arena Blvd., Suite 200, Sacramento, CA 95834

Fax # 916-264-1901

FAXED PERMIT APPLICATION

(certain restrictions apply)

2 Oct. 06

Faxed request must be received in this office by 3:00 P.M. to be processed the following work day.

Note: Contractors must have a current certificate of Worker's Compensation Insurance.

Note: Work started before a Building Permit is issued will be subject to a fine.

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

RESIDENTIAL APARTMENTS COMMERCIAL (limited)
Contract Price \$ 16,000.00

Job Address: 4950

Contact Person: E.P. ATKINS

Property Owner: Bill & Shirley Thomas

Address: 1950 ALTEIRA WAY

City/State/Zip: SACRAMENTO, CA 95834

Phone: 662-1371

Contractor: ATKINS

Contractor License #: 1512

Contractor Address: 2014 ST

Contractor City/State/Zip: SACRAMENTO, CA 95814

Contractor Phone: 441-0980

Contractor Fax: 441-0980

NATURE OF REQUEST: Indicate from the selections below and provide details under description of work.

Reroof (excluding tile)

Tear-Off

Reshield

House Garage

Stories: _____

Squares: _____

Material:

Siding

Wood

T-111

Hardz

Vinyl

Stucco

*Design Review approval may be required.

HVAC Installations

Change-out

Heat Pump

Package

Split system

Roof mount

Cut-in

Heat pump or elect. unit to gas.

Wall furnace

Other (describe below)

Value of duct work: _____

Equipment: _____

*Design Review approval may be required.

Minor Electric and/or

Minor Plumbing

Electric Service Change # _____

New electric circuits

Re-wire

Water Service Replacement

Sewer Service Replacement

Gas Line Replacement

Re-plumb

Water Waste

*Design Review approval may be required.

Public Utilities Safety Inspection (Residential and single apartment units Only)

SMUD

PG&E

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

DESCRIPTION OF WORK:

HVAC CHANGE OUT = FURNACE AHU, A/C BACKYARD

06/532

0615321

CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 1 of 8) CF-4R			
Project Address 4950 Alterra Way		Builder or Installer Name Comfort Master of Sacramento	
Builder or Installer Contact Ed Atkins		Telephone 916 441-0960	Plan/Permit (Additions or Alterations) Number 0616321
HERS Rater Steve Vasa - CC2004262		Telephone 916-682-8730	Sample Group Number
Compliance Method (Prescriptive)		Climate Zone 12	
Certifying Signature		Date 10/10/06	Sample House Number
Firm Capitol Energy Consultants		HERS Provider CalCerts	
Street Address: 1709 Adonis Way		City/State/Zip: Sacramento CA 95864	

Copies to: BUILDER, HERS PROVIDER AND BUILDING DEPARTMENT

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 CF-6R (Installation Certificate).
- New ducts are fully ducted (i.e., does not use building cavities as plenums or platform returns in lieu of ducts).
- New ducts with cloth backed, rubber adhesive duct tape is installed, mastic and draw bands 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

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

Duct Diagnostic Leakage Testing Results

NEW CONSTRUCTION:			
	Duct Pressurization Test Results (CFM @ 25 Pa)	Measured Values	
1	Enter Tested Leakage Flow in CFM:		
2	Fan Flow: Calculated (Nominal: <input checked="" type="checkbox"/> Cooling <input checked="" type="checkbox"/> Heating) or <input checked="" type="checkbox"/> Measured Enter Total Fan Flow in CFM:	1215	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
3	Pass if Leakage Percentage < 6% [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 CF-6R: Pre-Test of Existing Duct System Prior to Duct System Alteration and/or Equipment Change-Out.		
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.	48	
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)		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
8	Entire New Duct System - Pass if Leakage Percentage < 6% [100 x [(Line # 5) / (Line # 2)]]	3.9	<input checked="" 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)]]		<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)]] and Verification by Smoke Test and Visual Inspection		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
	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

System Passes

INSTALLATION CERTIFICATE

(Page 3 of 12) CF-6R

Site Address 4950 Alterra Way	Permit Number 0615321
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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 pump)	CEC Certified Mfr. Name and Model Number	# of Identical Systems	Efficiency (AFUE, etc.) ¹ (≥CF-1R value)	Duct Location (attic, etc.)	Duct or Piping R-value	Heating Load (Btu/hr)	Heating Capacity (Btu/hr)
FURNACE	58MVB060-F-14	1	93% AFUE	attic	R-8		60,000
	Carrier						

Cooling Equipment

Equip Type (pkg. heat pump)	CEC Certified Mfr. Name and Model Number	# of Identical Systems	Efficiency (SEER or EER) ¹ (≥CF-1R value)	Duct Location (attic, etc.)	Duct R-value	Cooling Load (Btu/hr)	Cooling Capacity (Btu/hr)
A/C	4ANA736A30	1	15.50	attic	R-8		36,000
	Carrier						

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.

✓ I, 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.

Installing Subcontractor (Co. Name) OR General Contractor (Co. Name) OR Owner	Comfort Master of Sacramento
Signature: 	Date: 10/10/06

Copies to: BUILDING DEPARTMENT, HERS RATER (IF APPLICABLE) BUILDING OWNER AT OCCUPANCY

INSTALLATION CERTIFICATE

(Page 4 of 12) CF-6R

Site Address
4950 Alterra Way

Permit Number
0616321

INSTALLER COMPLIANCE STATEMENT FOR DUCT LEAKAGE

INSTALLER COMPLIANCE STATEMENT

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

INSTALLER VISUAL INSPECTION AT FINAL CONSTRUCTION STAGE FOR NEW DUCTS:

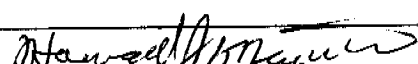
- Remove at least one supply and one return register, and verify that the spaces between the register boot and the interior finishing wall are properly sealed.
- If the house rough-in duct leakage test was conducted without an air handler installed, inspect the connection points between the air handler 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 on new ducts.

DUCT LEAKAGE REDUCTION

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

NEW CONSTRUCTION:			
	Duct Pressurization Test Results (CFM @ 25 Pa)	Measured Values	
1	Enter Tested Leakage Flow in CFM:		
2	Fan Flow: Calculated (Nominal: <input type="checkbox"/> Cooling <input checked="" 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:	1215	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
3	Pass if Leakage Percentage < 6% for Final or < 4% at Rough-in without air handle: [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.	48	
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)		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
8	Entire New Duct System - Pass if Leakage Percentage < 6% for Final. [100 x [(Line # 5) / (Line # 2)]]	3.9	<input checked="" 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)]]		<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)]] 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 Pass if One of Lines # 9 through # 12 pass		<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

I, 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 150 (m) of the 2005 Building Energy Efficiency standards.

Installing Subcontractor (Co. Name) OR General Contractor (Co. Name) OR Owner	Comfort Master of Sacramento
(Signature): 	Date: 10/10/06

Copies to: BUILDING DEPARTMENT, HERS RATER (IF APPLICABLE) BUILDING OWNER AT OCCUPANCY

INSTALLATION CERTIFICATE

(Page 5 of 12) CF-6R

Site Address **4950 Alterra Way**

Permit Number **0618321**

✓ **THERMOSTATIC EXPANSION VALVE (TXV)**

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

✓	<input checked="" 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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			Yes is a pass	Pass	Fail

✓ **REFRIGERANT CHARGE MEASUREMENT**

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

Outdoor Unit Serial #	2706E06402 2706E06402	
Location	East Side Back of house	
Outdoor Unit Make	Carrier	
Outdoor Unit Model	24ANA736A300 24ANA736A300	
Cooling Capacity	3 Ton	Btu/hr 36000
Date of Verification	10-9-06	
Date of Refrigerant Gauge Calibration	10-3-06	(must be checked monthly)
Date of Thermocouple Calibration	10-3-06	(must be checked monthly)

Standard Charge Measurement Procedure (outdoor air dry-bulb 55°F 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 procedure.

Measured Temperatures

Supply (evaporator leaving) air dry-bulb temperature (Tsupply, db)	45.3	°F
Return (evaporator entering) air dry-bulb temperature (Treturn, db)	66	°F
Return (evaporator entering) air wet-bulb temperature (Treturn, wb)	55	°F
Evaporator saturation temperature (Tevaporator, sat)	32	°F
Suction line temperature (Tsuction, db)	49.1	°F
Condenser (entering) air dry-bulb temperature (Tcondenser, db)	82	°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

Subcooling
 13.7°
 14.0°
 0.3°

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	20.5	°F
Target Temperature Split (from Table RD3)	17.7	°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)	2.8	°F

INSTALLATION CERTIFICATE

(Page 8 of 12) CF-6R

Site Address **4950 Alterra Way**

Permit Number **0616321**

FAN WATT DRAW

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

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

ADEQUATE AIRFLOW VERIFICATION

Procedures for measuring the airflow are available in RACM, Appendix RE3.1.

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

MAXIMUM COOLING CAPACITY

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

1	<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Adequate airflow verified (see adequate airflow credit)		
2	<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Refrigerant charge or TXV		
3	<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Duct leakage reduction credit verified		
4	<input checked="" type="checkbox"/>	<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 checked="" type="checkbox"/>	<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.	<input type="checkbox"/>	<input type="checkbox"/>
Yes to 1, 2, and 3; and Yes to either 4 or 5 is a pass					Pass	Fail

HIGH EER AIR CONDITIONER

Procedures for verification are available in RACM, Appendix RI.

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

Installing Subcontractor (Co. Name) OR General Contractor (Co. Name) OR Owner	Comfort Master of Sacramento
Signature:	Date: 10/10/06

Copies to: BUILDING DEPARTMENT, HERS RATER (IF APPLICABLE) BUILDING OWNER AT OCCUPANCY

INSTALLATION CERTIFICATE**(Page 6 of 12) CF-6R**Site Address **4950 Alterra Way**Permit Number **0616321****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 °F)

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 °F 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.***Weigh-In Charging Method for Refrigerant Charge**

Actual liquid line length:	40	ft
Manufacturer's Standard liquid line length:	15	ft
Difference (Actual - Standard):	25	ft
Manufacturer's correction (ounces per foot) $16 \times$ difference in length = 15 ounces (+ = add) (- = remove) 15 oz of R-410-A Added		

Measured Airflow Method for Adequate Airflow Verification available in RACM, Appendix RD2.6

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 airflow).

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

Installing Subcontractor (Co. Name) OR General Contractor (Co. Name) OR Owner	Comfort Master of Sacramento
Signature: 	Date: 10/10/06

Copies to: BUILDING DEPARTMENT, HERS RATER (IF APPLICABLE) BUILDING OWNER AT OCCUPANCY