

CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Permit No: 0610630

Insp Area: 1

Thos Bros: 297H4

Site Address: 441 SAN MIGUEL WY SAC

Parcel No: 004-0234-025

Sub-Type: ASFR

Housing (Y/N): N

CONTRACTOR  
PHOENIX CONSTR.  
8677 KINGDALE AV  
O'VALE CA 95662

OWNER  
RICHARD PAUL  
441 SAN MIGUEL WY  
SACRAMENTO, CA 95819

PAID  
CITY OF SACRAMENTO  
AUG 15 2006  
NEIGHBORHOODS PLANNING  
AND DEVELOPMENT SERVICES

ARCHITECT

Nature of Work: 897 SF 2ND STORY ADDITION AND 95 SF 1ST FLOOR ADDITION. AND NEW 322 SF GARAGE

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 A, B, C, 20, C42 License Number 268157 Date 8/15/06 Contractor 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 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 8/15/06 Owner Signature \_\_\_\_\_

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

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

Date 8/15/06 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.

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

Carrier \_\_\_\_\_ Policy Number \_\_\_\_\_ Exp Date \_\_\_\_\_

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

Date 8/15/06 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.

**INSTALLATION CERTIFICATE**

(Page 10 of 12) CF-6R

Site Address

441 San Miguel Wy

Permit Number

0610630

**Insulation Installation Quality Certificate**

Description of Insulation, (CF-6R, formerly IC-1) signed by the installer stating: insulation manufacturer's name, material identification, installed R-values, and for loose-fill insulation: minimum weight per square foot and minimum inches

Installation meets all applicable requirements as specified in the High Quality Insulation Installation Procedures (ACM, Appendix RH)

<b>✓ FLOOR</b>			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All floor joist cavity insulation installed to uniformly fit the cavity side-to-side and end-to-end
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Insulation in contact with the subfloor or rim joists insulated
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Insulation properly supported to avoid gaps, voids, and compression
Yes	No	NA	
<b>✓ WALLS</b>			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wall stud cavities caulked or foamed to provide an air tight envelope
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wall stud cavity insulation uniformly fills the cavity side-to-side, top-to-bottom, and front-to-back
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No gaps
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No voids over 3/4" deep or more than 10% of the batt surface area.
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hard to access wall stud cavities such as; corner channels, wall intersections, and behind tub/shower enclosures insulated to proper R-Value
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Small spaces filled
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rim-joists insulated
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Loose fill wall insulation meets or exceeds manufacturer's minimum weight-per-square-foot requirement
Yes	No	NA	
<b>✓ ROOF/CEILING PREPARATION</b>			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All draft stops in place to form a continuous ceiling and wall air barrier
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	All drops covered with hard covers
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All draft stops and hard covers caulked or foamed to provide an air tight envelope
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	All recessed light fixtures IC and air tight (AT) rated and sealed with a gasket or caulk between the housing and the ceiling
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Floor cavities on multiple-story buildings have air tight draft stops to all adjoining attics
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Eave vents prepared for blown insulation - maintain net free-ventilation area
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knee walls insulated or prepared for blown insulation
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Area under equipment platforms and cat-walks insulated or accessible for blown insulation
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Attic rulers installed
Yes	No	NA	

**INSTALLATION CERTIFICATE**

(Page 11 of 12) CF-6R

Site Address	Permit Number
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✓ **ROOF/CEILING BATTS**

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No gaps
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No voids over ¼ in. deep or more than 10% of the batt surface area.
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Insulation in contact with the air-barrier
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Recessed light fixtures covered
Yes	No	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Net free-ventilation area maintained at eave vents
Yes	No	NA	

✓ **ROOF/CEILING LOOSE-FILL**

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Insulation uniformly covers the entire ceiling (or roof) area from the outside of all exterior walls.
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Baffles installed at eaves vents or soffit vents - maintain net free-ventilation area of eave vent
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Attic access insulated
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Recessed light fixtures covered
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Insulation at proper depth – insulation rulers visible and indicating proper depth and R-value
Yes	No	NA	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Loose-fill insulation meets or exceeds manufacturer's minimum weight and thickness requirements for the target R-value. Target R-value _____, Manufacturer's minimum required weight for the target R-value _____ (pounds-per-square-foot). Manufacturer's minimum required thickness at time of installation _____. Manufacturer's minimum required settled thickness _____. Note: To receive compliance credit the HERS rater shall verify that the manufacturer's minimum weight and thickness has been achieved for the target R-value. (CF-6R only)
Yes	No	NA	

**DECLARATION**

✓  I hereby certify that the installation meets all applicable requirements as specified in the Insulation Installation Procedures.

Installing Subcontractor (Co. Name) OR General Contractor (Co. Name) OR Owner	
Signature:	Date: Feb 15, 2007

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

<b>INSTALLATION CERTIFICATE</b>		<b>(Page 12 of 12) CF-6R</b>
Site Address <u>441 San Miguel Wy, Sacramento</u>	Permit Number <u>0610630</u>	
County <del>Subdivision</del> <u>Sacramento</u>	Lot Number	

**Description of Insulation (Formerly IC-1 Form)**

<p>1. RAISED FLOOR  Material <u>Batt</u>  Thickness (inches) <u>6 1/4"</u></p>	Brand Name <u>CertainTeed</u> Thermal Resistance (R-Value) <u>R-19</u>
<p>2. SLAB FLOOR/PERIMETER  Material _____  Thickness (inches) _____  Perimeter Insulation Depth (inches) _____</p>	Brand Name _____ Thermal Resistance (R-Value) _____
<p>3. EXTERIOR WALL  Frame Type <u>Wood</u>  A. Cavity Insulation  Material <u>Batt</u>  Thickness (inches) <u>3 1/2</u>  B. Exterior Foam Sheathing  Material <u>N/A</u>  Thickness (inches) _____</p>	Brand Name <u>CertainTeed</u> Thermal Resistance (R-Value) <u>R-13</u>  Brand Name _____ Thermal Resistance (R-Value) _____
<p>4. FOUNDATION WALL  Material _____  Thickness (inches) _____</p>	Brand Name _____ Thermal Resistance (R-Value) _____
<p>5. CEILING  Batt or Blanket Type <u>Batt</u>  Thickness (inches) <u>12"</u>  Loose Fill Type <u>N/A</u>  Contractor's min installed weight/ft<sup>2</sup> _____ lb  Manufacturer's installed weight per square foot to achieve Thermal Resistance (R-Value) _____</p>	Brand Name <u>CertainTeed</u> Thermal Resistance (R-Value) <u>R-38</u> Brand _____ Minimum thickness _____ inches
<p>6. ROOF  Material _____  Thickness (inches) _____</p>	Brand Name _____ Thermal Resistance (R-Value) _____

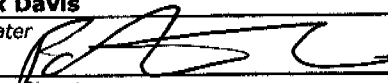
**Declaration**

I hereby certify that the above insulation was installed in the building at the above location in conformance with the current *Energy Efficiency Standards* for residential buildings (Title 24, Part 6, California Code of Regulations) as indicated on the Certificate of Compliance, where applicable.

Item #s (if applicable) <u>1, 3, 5</u>	Signature <u>George Vandusen</u>	Date <u>2-15-07</u>	Installing Subcontractor (Co. Name) OR <u>General Contractor</u> (Co. Name) OR Owner OR Window Distributor <u>Phoenix Construction</u>
Item #s (if applicable)	Signature	Date	Installing Subcontractor (Co. Name) OR General Contractor (Co. Name) OR Owner OR Window Distributor
Item #s (if applicable)	Signature	Date	Installing Subcontractor (Co. Name) OR General Contractor (Co. Name) OR Owner OR Window Distributor

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

**CF-4R**

<b>441 San Miguel - Carmichael, CA 95608</b> <i>Project Address</i>	<b>Brower Mechanical Inc. / 686451</b> <i>Contractor Name / License No.</i>
<b>Kay</b> <i>Contractor Contact</i>	<b>916-624-0808 0610630</b> <i>Telephone Permit Number</i>
<b>Patrick Davis</b> <i>HERS Rater</i>	<b>916-624-0902 72227</b> <i>Telephone Sample Group Number</i>
 <i>Certifying Signature</i>	<b>August 3, 2007 CC14-1798412809</b> <i>Date Certificate Number</i>
Firm: <b>Valley Duct Testing</b> Street Address: <b>6345 Rainier Ave</b>	HERS Provider: <b>CalCERTS, Inc.</b> City/State/Zip: <b>Rocklin / CA / 95677</b>

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:	2039	
3	Pass if Leakage Percentage < 6% [ 100 x ( 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.	121	
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 < 6% [ 100 x ( Line 5 / Line 2 ) ]:	5.93%	<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 <= 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		<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 FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 3-4 of 8)**

CF-4R

**441 San Miguel - Carmichael, CA 95608**

Project Address

**Brower Mechanical Inc. / 686451**

Contractor Name / License No.

**Kay****916-624-0808****0610630**

Contractor Contact

Telephone

Permit Number

**Patrick Davis****916-624-0902****72227**

HERS Rater

Telephone

Sample Group Number

Certifying Signature

Date

Certificate Number

Firm:

**Valley Duct Testing**HERS Provider: **CalCERTS, Inc.**

Street Address:

**6345 Rainier Ave**City/State/Zip: **Rocklin / CA / 95677**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

Site Address

Permit Number 0610630

441 San Miguel Wy

Sacramento

Number and Street

City

Sacramento

County

Subdivision

Lot Number

Description of Installation

1. ROOF

Material ~~\_\_\_\_\_~~  
Thickness (inches) ~~\_\_\_\_\_~~

Brand Name \_\_\_\_\_  
Thermal Resistance (R-Value) \_\_\_\_\_

2. CEILING

Batt or Blanket Type Batt  
Thickness (inches) 12"

Brand Name CertainTeed  
Thermal Resistance (R-Value) R-38

Loose Fill Type \_\_\_\_\_  
Contractor's min installed weight/ft<sup>2</sup> \_\_\_\_\_ lb  
Manufacturer's installed weight per square foot to achieve Thermal Resistance (R-Value) \_\_\_\_\_

Brand \_\_\_\_\_  
Minimum thickness \_\_\_\_\_ inches

3. EXTERIOR WALL

Frame Type wood

A. Cavity Insulation

Material Batt  
Thickness (inches) 3 1/2"

Brand Name CertainTeed  
Thermal Resistance (R-Value) R-13

B. Exterior Foam Sheathing

Material \_\_\_\_\_  
Thickness (inches) \_\_\_\_\_

Brand Name \_\_\_\_\_  
Thermal Resistance (R-Value) \_\_\_\_\_

4. RAISED FLOOR

Material Batt  
Thickness (inches) 6 1/4"

Brand Name CertainTeed  
Thermal Resistance (R-Value) R-19

5. SLAB FLOOR/PERIMETER

Material ~~\_\_\_\_\_~~  
Thickness (inches) ~~\_\_\_\_\_~~  
Perimeter Insulation Depth (inches) \_\_\_\_\_

Brand Name \_\_\_\_\_  
Thermal Resistance (R-Value) \_\_\_\_\_

6. FOUNDATION WALL

Material ~~\_\_\_\_\_~~  
Thickness (inches) ~~\_\_\_\_\_~~

Brand Name \_\_\_\_\_  
Thermal Resistance (R-Value) \_\_\_\_\_

Declaration

I hereby certify that the above insulation was installed in the building at the above location in conformance with the current Energy Efficiency Standards for residential buildings (Title 24, Part 6, California Code of Regulations) as indicated on the Certificate of Compliance, where applicable.

2,3,4  
Item #s

Signature, Date

2-15-07

Phoenix Construction

Installing Subcontractor (Co. Name) OR

General Contractor (Co. Name) OR Owner

Item #s

Signature, Date

Installing Subcontractor (Co. Name) OR

General Contractor (Co. Name) OR Owner

Item #s

Signature, Date

Installing Subcontractor (Co. Name) OR

General Contractor (Co. Name) OR Owner

**INSTALLATION CERTIFICATE**

(Page 3 of 12) CF-6R

Site Address

441 San Miguel, Carmichael

Permit Number

0610630

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*

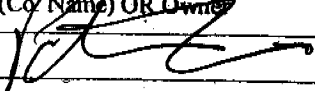
Equip Type (pkg. heat pump)	CEC Certified Mfr. Name and Model Number	# of Identical Systems	Efficiency (AFUE, etc.) <sup>1</sup> (≥CF-1R value)	Duct Location (attic, etc.)	Duct or Piping R-value	Heating Load (Btu/hr)	Heating Capacity (Btu/hr)
Split GE	TRANE TUC1C100A48 TAB	1	92.1	Attic	R-6		94,000

*Cooling Equipment*

Equip Type (pkg. heat pump)	CEC Certified Mfr. Name and Model Number	# of Identical Systems	Efficiency (SEER or EER) <sup>1</sup> (≥CF-1R value)	Duct Location (attic, etc.)	Duct R-value	Cooling Load (Btu/hr)	Cooling Capacity (Btu/hr)
Split GE	TRANE 2TTB3048A	1	13	Attic	R-6		46,500

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	
Signature: 	Date: 8/3/05

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



Site Address	Permit Number
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**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:**

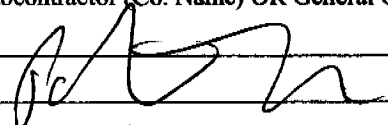
- Remove at least one supply and one return register, and verify that the spaces between the register boot and the interior finishing wall are properly sealed.
- If the house rough-in duct leakage test was conducted without an air handler installed, inspect the connection points between the air handler 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 checked="" 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:	2039	✓ ✓
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.	121	
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. [100 x [ 121 (Line # 5) / 2039 (Line # 2)]]	5.9	<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		<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

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	
Signature: 	Date: 8/17/07

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

**INSTALLATION CERTIFICATE**

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**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 #		
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 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)		°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 -100°F)		°F

<b>INSTALLATION CERTIFICATE</b>		<b>(Page 6 of 12) CF-6R</b>
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**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.

<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	System Passes
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**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:		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 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.

<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	System Passes
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Installing Subcontractor (Co. Name) OR General Contractor (Co. Name) OR Owner	
Signature:	Date: 8/3/07

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