

CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Permit No: 0519845

Insp Area: 1

Thos Bros: 298C6

Site Address: 700 ELMHURST CR SAC

Parcel No: 295-0100-017

PAID  
CITY OF SACRAMENTO

JAN 30 2006

Sub-Type: RES

Housing (Y/N): N

CONTRACTOR  
CLARKE & RUSH MECH  
4411 AUBURN BL  
SACRAMENTO CA 95841

OWNER  
STEPHENS  
700 ELMHURST CR  
SAC CA

NEW CITY HALL

ARCHITECT

Nature of Work: WALK IN PERMIT. C/O HVAC & HEAT PUMP & CONDENSER. 2005 ENERGY STANDARDS APPLY. COMPLIANCE DOC'S REQ'D @ FINAL.

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.

X License Class C-20 License Number 608005 Date 1-30-06 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 \_\_\_\_\_ 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.

X Date 1-30-06 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 ZENITH INS CO Policy Number Z066385802 Exp Date 10/01/2006

(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.

X Date 1-30-06 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.

0519845

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

700 Embury Circle Project Address	Clarke & Rush Mechanical / 608005 Contractor Name / License No.
	05-19845 Permit Number
Contractor Contact Brian Sipp	Telephone: 916-965-8343 Permit Number: 14565
HERS Rater <i>Brian Sipp</i>	Telephone: January 16, 2006 Sample Group Number: CC14-1798355153
Carrying Signature	Date: CC14-1798355153 Certificate Number
Firm: Energy Analysis and Comfort Solutions, Inc.	HERS Provider: CalCERTS
Street Address: P.O. Box 7233	City/State/Zip: Concordville / 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 rater must check and verify that the new distribution system is fully ducted and correct tags in 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-4R has been received for the sample and tested building.  
The installer has provided a copy of the CF-4R (Installation Certificate).  
New Distribution system is fully ducted (i.e., does not use building cavities as plenums or plenum 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 Cooling Heating) or 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	Enter New Duct System - Pass if Leakage Percentage <= 6% [ 100 x ( Line 6 / Line 2 ) ]:	Not Tested	Pass 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	Pass Fail
10	Pass if Leakage to Outside Percentage <= 10% [ 100 x ( Line 7 / Line 2 ) ]:	Not Tested	Pass Fail
11	Pass if Leakage Reduction Percentage >= 60% [ 100 x ( Line 6 / Line 4 ) ] and Verification by Smoke Test and Visual Inspection	Not Tested	Pass Fail
12	Pass if Sealing of all Accessible Leaks and Verification by Smoke Test and Visual Inspection	Not Tested	Pass Fail
Pass if One of Lines 9 through 12 pass			Pass Fail

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

700 Elmhurst Circle Project Address		Chirba & Rush Mechanical / 608005 Contractor Name / License No.	
		05-19845 Permit Number	
Contractor Contact		Telephone	
Brian Sipp		916-865-8343	
HERS Rating		Sample Group Number	
January 16, 2006		CC14-1798355153	
Certifying Signature		Date	
Firm:		HERS Provider: CalCERTS	
Energy Analysis and Comfort Solutions, INC.			
Street Address: P.O. Box 7233		City/State/Zip: Oranburg / CA / 95667	

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 performing 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-4R has been received for the sample and tested building.  
The installer has provided a copy of the CF-4R (Installation Certificate).  
New Distribution system is fully ducted (i.e., does not use building cavities as plenums or plenum 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 Penetration Test Results (CFM @ 25 Pa)	Measured Values	
1	Enter Tested Leakage Flow in CFM:	N/A	
2	Fan Flow: Calculated (Nominal Cooling Heating) or Measured Enter Total Fan Flow in CFM:	Not Tested	
3	Pass if Leakage Percentage $\leq 6\% [100 \times (\text{Line 1} / \text{Line 2})]$ :	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	Enter New Duct System - Pass if Leakage Percentage $\leq 6\% [100 \times (\text{Line 5} / \text{Line 2})]$ :	Not Tested	Pass 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 $\leq 15\% [100 \times (\text{Line 5} / \text{Line 2})]$ :	Not Tested	Pass Fail
10	Pass if Leakage to Outside Percentage $\leq 10\% [100 \times (\text{Line 7} / \text{Line 2})]$ :	Not Tested	Pass Fail
11	Pass if Leakage Reduction Percentage $\geq 60\% [100 \times (\text{Line 6} / \text{Line 4})]$ and Verification by Smoke Test and Visual Inspection:	Not Tested	Pass Fail
12	Pass if Sealing of All Accessible Leaks and Verification by Smoke Test and Visual Inspection:	Not Tested	Pass Fail
Pass if One of Lines #9 through #12 pass			Pass Fail

4411 Auburn Blvd., Sacramento, CA. 95841  
916-609-2841 Fax 916-609-2635

Clarke & Rush  
Mechanical

# Fax

To: RON CARPENTER From: Trish Siedentopf  
Fax: 916-284-1901 Pages: 13 (Including Cover)  
Phone: Date: 3/29/06  
Re: JANE STEPHENS CC:  
700 ELMHURST CIRCLE PERMIT # 0519845  
 Urgent  For Review  Please Comment  Please Reply  Please Recycle

• Comments:

RON CARPENTER,

PER MRS STEPHENS REQUEST, SHE ASKED ME TO FAX THESE DOCUMENTS TO YOU. I KNOW THAT I HAVE SENT THESE TO HER BEFORE, BUT WITH HER RECENT LOSS OF VISION, SHE SAID SHE CAN NOT FIND THEM. IF YOU NEED ANY THING ELSE, PLEASE CONTACT ME @ 916-609-2841 AND I WILL BE HAPPY TO PROVIDE. SHE (MRS STEPHENS) DOES NOT BELIEVE THAT THERE WERE ANY OTHER CORRECTIONS ON THE CORRECTION SHEET, HOWEVER SHE HAS PROBLEMS READING, SO SHE WAS NOT SURE. I AS WELL HAVE MAILED HER TWO MORE COPIES OF THE COMPLETE PACKET OF CF1R'S, CF8R'S AND CF4R'S FOR HER RECORDS, AND A COPY FOR YOU IN CASE YOU NEED TO GO BACK OUT AND REINSPECT.

THANK YOU AND HAVE A NICE DAY.



PATRICIA SIEDENTOPF

CLARKE & RUSH MECHANICAL

Contractor Name Clarke & Rush Mechanical		City Sacramento		Zip 95841		Phone 916-809-2665		Fax 916-809-2635	
Company Contact Patricia Scedentopi		Job Number 08F4166		Permit Number		License # 808006		Company ID # 50001	
Est Start 12/21/2005		Est Complete 12/21/2005		Plan # 50001		Group # 820A		House #	
Owner's Name/ Project Title Jane Stephens		City Sacramento		Zip 95826		Phone 916-841-0482		Fax/ email	
Address 4411 Auburn Blvd.		City Sacramento		Zip 95826		Phone 916-841-0482		Fax/ email	
Estimate # 12/21/2005		Bid Dept - Permit From City of Sacramento		Plan # 50001		Group # 820A		House #	
Address 700 Elmhurst Circle		City Sacramento		Zip 95826		Phone 916-841-0482		Fax/ email	
City of Sacramento		County Sacramento		Bid Dept - Permit From City of Sacramento		Plan # 50001		Group # 820A	
Multi Family <input checked="" type="checkbox"/>		Single Family <input checked="" type="checkbox"/>		Addition-new rm <input checked="" type="checkbox"/>		Alteration-change <input checked="" type="checkbox"/>		Heat Load 40,000 BTUs	
# of Dwellings 1		Slab Floor <input checked="" type="checkbox"/>		Raised Floor <input type="checkbox"/>		Climate Zone 72		Cool Load 38,000 BTUs	
Front Orientation (N,S,E,W) W		Number of Stories 2		Conditioned Floor Area SF		Maximum Ceiling Height Ft		Duct Location ATTIC & BTWN WALLS	
AFUE X		Gas / Electric X		Heat Pump X		CARRIER Model # 38Y03048		Duct - R value/IR4	
Split System Heat System Mfg		Condenser Sys Mfg		Model #		Serial #		Heat: BTU Input 44,000 BTUs	
Model #		Serial #		Model #		Serial #		Cooling: BTUs 42,000 BTUs	
Serial # 1505E73165		Serial #		Serial #		Serial #		Coil System Mfg	

Title 24 requirements - contractor and HERS verification check list

CFRR forms on job site	Permit #
Furnace Mfg and model # documented	Duct System - New or Exist
Furnace serial # documented	CFM Leakage
Coil Mfg and model # documented	Leakage pressure
Coil serial # documented	Equipment air flow in CFM
Condenser Mfg and model # documented	System % leakage
Condenser serial # documented	Test Date
TXV verified on split system	ARI #
High EER verified on options	Notes:
Air distribution system fully ducted	
Existing duct tape has draw bands and mastic	
All Supply registers sealed for test	
All Return grilles sealed for test	
Duct blaster w/ rings installed correctly	
Smoke required to pass test	
All register & grille seals removed	
Thermostat turned on after test	

Signature



**CERTIFICATE OF COMPLIANCE: RESIDENTIAL** (Page 1 of 5) **CF-1R**

Jane Stephens  
Project Title

700 Elmhurst Circle Sacramento CA 95825  
Project Address

Patricia Siedentopf 916-608-2665  
Documentation Author Telephone

Prescriptive 12  
Compliance Method (Prescriptive) Climate Zone

Date
Building Permit #
Plan Check / Date
Field Check / Date
Enforcement Agency Use Only

Alternative Component Package Method: (check one) C  D  D (Alternative)  
 Package C and Package D choices require HERS rater field verification and/or diagnostic testing (see CF-1R page 3)  
 For Package D Alternative see Appendix B Table 151-C Footnotes 7-14

**GENERAL INFORMATION**

Total Conditioned Floor Area (CFA) 0 ft<sup>2</sup> Average Ceiling Height: 10 ft  
 Maximum Allowed West Facing Fenestration Products Per Table 151-B or 151-C — (6% X CFA) NA ft<sup>2</sup>  
 Maximum Allowed Total Fenestration Products Per Table 151-B or 151-C — (20% X CFA) NA ft<sup>2</sup>  
 Building Type: (check one or more)  Single Family  Multifamily  Addition  Alteration  
 (If adding fenestration fill out WB-4R, Fenestration Maximum Allowed Area Worksheet and see Section 8.3.2 for Additions and 8.3.3 for Alterations.)  
 Number of Stories: 2 Number of Dwelling Units: 1  
 Floor Construction Type: slab Slab/Raised Floor (circle one or both)  
 Front Orientation: W North / South / East / West / All Orientations (input front orientation in degrees from True North and circle one).

**RADIANT BARRIER** (required in climate zones 2, 4, 8-15)

**OPAQUE SURFACES INCLUDING OPAQUE DOORS**

Component Type (Wall, Roof, Floor, Slab Edge, Doors)	Frame Type (Wood or Metal)	Cavity Insulation R-Value	Continuous Insulation R-Value	Assembly U-factor (for wood, metal frame and mass assemblies) 1	Joint Appendix IV Reference	Roof Radiant Barrier Installed Yes or No	Location/Comments (attic, garage, typical, etc.)

1) See Joint Appendix IV in Section IV.2, IV.3 and IV.4, which is the basis for the U-factor criterion. U-factors can not exceed prescriptive value to show equivalence to R-values.

**CERTIFICATE OF COMPLIANCE: RESIDENTIAL** (Page 2 of 5) **CF-1R**

Jane Stephens \_\_\_\_\_ Date \_\_\_\_\_  
 Project Title \_\_\_\_\_

**FENESTRATION PRODUCTS - U-FACTOR AND SHGC**

FENESTRATION MAXIMUM ALLOWED AREA WORKSHEET WS-4R - must be included for New Construction, Additions and Alterations.

Fenestration #/Type/Pos. (Front, Left, Rear, Right, Skylight)	Orientation, N, S, E, W	Area (ft <sup>2</sup> )	U-factor <sup>2</sup>	U-factor Source <sup>3</sup>	SHGC <sup>4</sup>	SHGC Source <sup>5</sup>	Exterior Shading/Overhangs <sup>6, 7</sup> Ck box if WS-3R is included

- 1) Skylights are now included in West-facing fenestration area if the skylights are tilted to the west or tilted in any direction when the pitch is less than 1:12. See §1811(f)(3) and in Section 3.2.3 of the Residential Manual
- 2) Enter values in this column as either NFRC Rated value or from Standards default Table 116A.
- 3) Indicate source either from NFRC or Table 116A.
- 4) Enter values in this column from NFRC or from Standards Default Table 116B or adjusted SHGC from WS-3R.
- 5) Indicate source either from NFRC or Table 116B.
- 6) Shading Devices are defined in Table 3-3 in the Residential Manual and see WS-3R to calculate Exterior Shading devices.
- 7) See Section 3.2.4 in the Residential Manual.

**HVAC SYSTEMS**

Heating Equipment Type and Capacity (furnace, heat pump, boiler, etc.)	Minimum Efficiency (AFUE or HSPF)	Distribution Type and Location (ducts, attic, etc.)	Duct or Piping R-Value	Thermostat Type	Configuration (split or package)
Heat Pump 44000 BTU	0 AFUE 0 HSPF	TIC & BTWN WAL	R4	Programmable	Package

Cooling Equipment Type and Capacity (A/C, Heat Pump, Evap Cool)	Minimum Efficiency (SEER or EER)	Duct Location (attic, etc.)	Duct R-Value	Thermostat Type	Configuration (split or package)
Heat Pump 42000 BTU	10 SEER 0 EER	TIC & BTWN WAL	R4	Programmable	Package

**CERTIFICATE OF COMPLIANCE: RESIDENTIAL**

(Page 3 of 5)

CF-1R

Jane Stephens

Date

Project Title

**SEALED DUCTS and TXVs (or Alternative Measures)**

A signed CF-1R Form must be provided to the building department for each home for which the following are required.

<input type="checkbox"/>	Sealed Ducts (all climate zones) (installer testing and certification and HERS rater field verification required.)
<input type="checkbox"/>	TXVs, readily accessible (climate zones 2 and 8-15 only) (installer testing and certification and HERS Rater field verification required.)
<input type="checkbox"/>	Refrigerant Charge (climate zones 2 and 8-15 only) (installer testing and certification and HERS Rater field verification required.)
OR	
<input type="checkbox"/>	Alternative to Sealed Ducts and Refrigerant Charge /TXVs (See Package D Alternative Package Features for Project Climate Zone in the RMI Appendix B Table 161-C, Footnote 7-14.)

OR

For additions and alterations, duct systems that are not documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Residential ACM Manual and duct systems with more than 40 linear feet in unconditioned spaces shall meet the requirements of Section 150(m) and duct insulation requirements of Package D.

**WATER HEATING SYSTEMS**

<input type="checkbox"/>	Check box if system meets criteria of a "Standard" system. Standard system is one gas-fired water heater per dwelling unit. If the water heater is a storage type, 50 gallons is the maximum capacity and recirculation system is not allowed.
<input type="checkbox"/>	Check box when using Preapproved Alternative Water Heating table, Table 5-4 in Chapter 5 in the Residential Manual. No water heating calculations are required, and the system complies automatically.
<input type="checkbox"/>	Check box if system does not meet criteria of "Standard" system, and does not comply with the Preapproved Alternative Water Heating table. In this case, the Performance Method must be used and must be included in the submittal.
<input type="checkbox"/>	Check box to verify that a time control is required for a recirculating system pump for a system serving multiple units

**Systems serving single dwelling units**

Water Heater Type/Fuel Type	Distribution Type	Number in System	Rated Input <sup>1</sup> (kW or Btu/hr)	Tank Capacity (gallons)	Energy Factor <sup>1</sup> or Thermal Efficiency	Standby <sup>1</sup> Loss (%)	Tank External Insulation R-Value

**System serving multiple dwelling units**

Water Heater Type/Fuel Type	Distribution Type	Number in System	Rated Input <sup>1</sup> (kW or Btu/hr)	Tank Capacity (gallons)	Energy Factor <sup>1</sup> or Thermal Efficiency	Standby <sup>1</sup> Loss (%)	Tank External Insulation R-Value

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

**Pipe Insulation** (kitchen lines > 3/4 inches) All hot water pipes from the heating source to the kitchen fixtures that are 1/2 inches or greater in diameter shall be thermally insulated as specified by Section 150 (j) 2 A or 150 (j) 2 B.



**CERTIFICATE OF COMPLIANCE: RESIDENTIAL** (Page 4 of 5) **CF-1R**

Jane Stephens \_\_\_\_\_ Date \_\_\_\_\_  
 Project Title \_\_\_\_\_

**SPECIAL FEATURES NOT REQUIRING HERS VERIFICATION** (add extra sheets if necessary)  
 Indicate which special features are part of this project. The list below represents special features relevant to the Prescriptive and Performance Method.

	Feature	Required Forms (if applicable)	Description
<input type="checkbox"/>	Metal Framed Walls	CF-1R	
<input type="checkbox"/>	Radiant Barriers	CF-1R	
<input type="checkbox"/>	Exterior Shades	WB-4R N/A; Performance Calculation Required. Attach CRRC Label to Forms.	
<input type="checkbox"/>	Cool Roof	Performance Calculation Required; Attach Run to Forms.	
<input type="checkbox"/>	Dedicated Hydronic Heating System	Performance Calculation Required; Attach Run to Forms.	
<input type="checkbox"/>	Combined Hydronic System	Performance Calculation Required; Attach Run to Forms.	
<input type="checkbox"/>	Gas Cooling	N/A; Performance Calculation Required.	
<input type="checkbox"/>	Buried Ducts	N/A; Indicate on building plans.	
<input type="checkbox"/>	Kitchen Pipe Insulation	See Section 5.8.3 Distribution Systems in Residential Manual.	
<input type="checkbox"/>	Multiple Water Heaters Per Dwelling Unit	See Table 5-13 or use Performance Calculation and attach Run to Forms.	
<input type="checkbox"/>	Central Water Heating System Serving Multiple Dwellings	Performance Calculation and attach Run to Forms.	
<input type="checkbox"/>	Non-NASCA Large Water Heater	CF-1R	
<input type="checkbox"/>	Indirect Water Heater	See Table 5-13 or use Performance Calculation and attach Run to Forms.	
<input type="checkbox"/>	Instantaneous Gas Water Heater	See Table 5-13 or use Performance Calculation and attach Run to Forms.	
<input type="checkbox"/>	Solar Water Heating System	See Table 5-13 or use Performance Calculation and attach Run to Forms.	
<input type="checkbox"/>	Wood Stove Boiler	Performance Calculation and attach Run to Forms.	

**SPECIAL FEATURES REQUIRING HERS RATER VERIFICATION**  
 (add extra sheets if necessary) Indicate to the HERS Rater which credits are part of this project and need verification.

	Feature	Required Forms (if applicable)	Description
<input type="checkbox"/>	Duct Sealing	CF-GR part 4 of 12	
<input type="checkbox"/>	Refrigerant Charge	CF-GR part 5 of 12	
<input type="checkbox"/>	Thermostatic Expansion Valve	CF-GR part 6 of 12	

**CERTIFICATE OF COMPLIANCE: RESIDENTIAL**

(Page 5 of 5)

CF-1R

Jane Stephens  
Project Title

Date

**COMPLIANCE STATEMENT**

This certificate of compliance lists the building features and specifications needed to comply with Title 24, Parts 1 and 6 of the California Code of Regulations, and the administrative regulations to implement them. This certificate has been signed by the individual with overall design responsibility. The undersigned recognizes that compliance using duct design, duct sealing, verification of refrigerant charge and TXVs, insulation installation quality, and building envelope sealing require installer testing and certification and field verification by an approved NERB rater.

Designer or Owner (per Business and Professions Code)

Documentation Author

Name: Patricia Stedentopf	Name: Patricia Stedentopf
Title/Firm: Clarke & Rush Mechanical	Title/Firm: Clarke & Rush Mechanical
Address: 4411 Auburn Blvd. Sacramento CA 95841	Address: 4411 Auburn Blvd. Sacramento CA 95841
Telephone: 916-809-2885	Telephone: 916-809-2885
License #: 608006	
<i>Patricia Stedentopf</i> (signature) (date)	<i>Patricia Stedentopf</i> (signature) (date)

**Enforcement Agency**

Name:	Comments:
Title:	
Agency:	
Telephone:	
(signature / stamp) (date)	

*Stephens*

**INSTALLATION CERTIFICATE**

(Page 3 of 12)

CF-6R

700 Elmhurst Circle  
Site Address

Sacramento CA 95825

0

Permit Number

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 Typ (pkg- heat pump)	CEC Certified Mfr. Name, Model and Serial 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)
Package	CARRIER	1	0.00 AFUE	BTWN	R4	40000	44000
	38YCC048		0 HSPF				
	0						
HP							

**Cooling Equipment**

Equip Typ (pkg- heat pump)	CEC Certified Mfr. Name, Model and Serial Number	# of Identical Systems	Efficiency (AFUE, etc.) <sup>1</sup> >(CF-1R value)	Duct Location (attic, etc.)	Duct or Piping R-value	Cooling Load (Btu/hr)	Cooling Capacity (Btu/hr)
Package	0	1	10.00 SEER	BTWN	R4	39000	42000
	0		0 EER				
	0						
HP	0						
Coil	0						
	0						

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) 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 5), where applicable.

 12-21-05  
Signature, Date

Clarke & Rush Mechanical  
Installing Subcontractor (Co. Name)  
OR General Contractor (Co. Name) OR Owner

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

INSTALLATION CERTIFICATE (Page 4 of 12) CF-6R  
 700 Elmhurst Circle Sacramento CA 95825 0  
 Site Address Permit Number

### INSTALLER COMPLIANCE STATEMENT FOR DUCT LEAKAGE

Copies to: Builder, NERS 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 checked="" 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:	1600		
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
<b>ALTERATIONS: Duct System and/or HVAC Equipment Change-Out</b>			
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.	221		
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
<b>TEST OR VERIFICATION STANDARDS: For Altered Duct System and/or HVAC Equipment Change-Out</b> Use one of the following four Test or Verification Standards for compliance:			
9 Pass if Leakage Percentage < 10% [100 x (Line # 5)] / (Line # 2)]	13.9	<input checked="" 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
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 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 400.1(a) of the 2005 Building Energy Efficiency Standards.

Signature: [Signature] Date: 12-21-05 Clarke & Rush Mechanical  
 Installing Subcontractor (Co. Name) OR  
 General Contractor (Co. Name)

**INSTALLATION CERTIFICATE**

(Page 5 of 12)

CF-6R

700 Elmhurst Circle

Sacramento CA 95825

0

Permit Number

Site Address

**THERMOSTATIC EXPANSION VALVE (TXV)**

Procedures for field verification of thermostatic expansion valves are available in RACM, Appendix R1.

<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.		
			Yes is a pass	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> 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 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 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 = Treturn, 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 re-measurement, if between -3°F and -100°F)		F

(Page 6 of 12) CF-6R

**INSTALLATION CERTIFICATE**

700 Elmhurst Circle Sacramento CA 95828 0

Site Address 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.

**Weight-in Charging Method for Refrigerant Charge**

Actual liquid line length:		ft
Manufacturer's Standard liquid line length:		ft
Difference (Actual - Standard):	x difference in length =	ounces
Manufacturer's correction (ounces per foot) <span style="float: right;">(+ = add) (- = remove)</span>		

**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

*Rish [Signature]*  
 Signature, Date

**Clark & Rush Mechanical**  
 Installing Subcontractor (Co. Name) OR  
 General Contractor (Co. Name) OR Owner

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

(Page 8 of 12) CF-6R

**INSTALLATION CERTIFICATE** Sacramento CA 95825 0

700 Elmhurst Circle Permit Number

Site Address

**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"/>	RE3.2.1	Portable Watt Meter Measurement
<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"/>	RE4.1.1	Test design exists on plans
<input type="checkbox"/>	RE4.1.2	Diagnostic Fan Flow Using Flow Capture Hood
<input type="checkbox"/>	RE4.1.3	Diagnostic Fan Flow Using Pitot Static Probe
<input type="checkbox"/>	RE4.1.3	Diagnostic Fan Flow Using Flow Grid Measurement
Measured Airflow:		cfm/ton
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Measured airflow is greater than the criteria in Table RE-2
Yes is a pass		<input type="checkbox"/> Pass <input type="checkbox"/> 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
2	<input type="checkbox"/> Yes	<input type="checkbox"/> No	For split system, indoor coil is matched to outdoor coil
3	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Time Delay Relay Verified (if Required)
Yes to 1 and 2; and 3 (if Required) is a pass			
<input type="checkbox"/> Pass <input type="checkbox"/> Fail			

Tests Performed: \_\_\_\_\_

Signature, Date: *Irish Seider* Clark & Rush Mechanical

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

COPY TO: Building Department, HERS Rater, Building Owner at Occupancy

**CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 1 of 5) CF-4R**

**700 Embury Circle**  
 Project Address  
 Contractor Contact  
 Brian Sipp  
 HERS Rater  
 Brian Sipp  
 Certifying Signature  
 Firm: Energy Analysis and Comfort Solutions, Inc.  
 Street Address: P.O. Box 2239

Clark & Rush Mechanical / 608005  
 Contractor Name / License No.  
 05-19845  
 Permit Number  
 14565  
 Sample Group Number  
 CC14-1728355153  
 Certificate Number  
 January 16, 2006  
 Date  
 HERS Provider: CaCERTS  
 City/State/Zip: Grapewick / CA / 95662

**CODES TO: Homeowner, HERS Provider and Building Department**  
 This CF-4R has been registered with the CaCERTS registry in accordance with the Title 24 & Title 20 of the CCR.  
 CaCERTS 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 performing diagnostic testing and field verification, I certify that the house identified on this form complies with the diagnostic tested 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-4R has been received for the sample and tested buildings.  
 The installer has provided a copy of the CF-5R (Installation Certificate).  
 New distribution system is fully ducted (i.e., does not use building cavities as plenums or plenum 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 in and both of duct connections.

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

NEW CONSTRUCTION		Measured	VMUCS
1	Duct Permeation Test Results (CFM @ 25 Pa)		N/A
2	Enter Tested Leakage Flow in CFM:		
3	Fan Flow: Calculated (Minimal Cooling Heating) or Measured Enter Total Fan Flow in CFM:	Not Tested	
4	Pass if Leakage Percentage $\leq 6\%$ ( $100 \times \text{Line 2} / \text{Line 3}$ ):	N/A	N/A
ALTERATIONS: Duct System and/or HVAC Equipment Change-Out			
5	Enter Tested Leakage Flow in CFM from CF-4R: Pre-Test of Existing Duct System Prior to Duct System Alteration and/or Equipment Change-Out.	Not Tested	
6	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	
7	Enter Reduction in Leakage for Altered Duct System (Line 5 - Line 6) - (Only if Applicable)	Not Tested	
8	Enter Tested Leakage Flow in CFM to Outside (Only if Applicable)	Not Tested	
9	Enter New Duct System - Pass if Leakage Percentage $\leq 6\%$ ( $100 \times \text{Line 8} / \text{Line 2}$ ):	Not Tested	Pass 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:			
10	Pass if Leakage Percentage $\leq 16\%$ ( $100 \times \text{Line 5} / \text{Line 2}$ ):	Not Tested	Pass Fail
11	Pass if Leakage to Outside Percentage $\leq 10\%$ ( $100 \times \text{Line 7} / \text{Line 2}$ ):	Not Tested	Pass Fail
12	Pass if Leakage Reduction Percentage $\geq 60\%$ ( $100 \times \text{Line 6} / \text{Line 5}$ ) and Verification by Smoke Test and Visual Inspection	Not Tested	Pass Fail
13	Pass if Sealing of all Accessible Leaks and Verification by Smoke Test and Visual Inspection	Not Tested	Pass Fail
Pass if One of Lines #9 through #13 pass		Not Tested	Pass Fail