

CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

PAID  
CITY OF SACRAMENTO

Permit No: 0604179

MAR 28 2006

Insp Area: 4

Thos Bros: 277C5

NEIGHBORHOODS PLANNING  
AND DEVELOPMENT SERVICES

Sub-Type: RES

Housing (Y/N): N

Site Address: 1575 WOODLAND OAKS WY SAC

Parcel No: 225-0464-022

**CONTRACTOR**  
HEALD MECHANICAL  
3636 EASTERN AV  
SAC CA 95821

**OWNER**  
WIGGINS DEBRA/KENNETH W REED  
1575 WOODLAND OAKS WAY  
SACRAMENTO, CA 95833

**ARCHITECT**

Nature of Work: HVAC--C/O SPLIT SYSTEM AND GAS WATER HEATER C/O

**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 607590 Date 3/28/06 Contractor Signature Breg Heald

**OWNER-BUILDER DECLARATION:** I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code; any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500.00);

\_\_\_\_\_, I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

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

\_\_\_\_\_, I am exempt under Sec. \_\_\_\_\_ B & PC for this reason: \_\_\_\_\_

Date \_\_\_\_\_ Owner Signature \_\_\_\_\_

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

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

Date 3/28/06 Applicant/Agent Signature Breg Heald

**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 STATE FUND Policy Number 1449047 -01 Exp Date 05/01/2006

\_\_\_\_\_, (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.

Date 3/28/06 Applicant Signature Breg Heald

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.



Planning and Building Department  
Building Division

**CITY OF SACRAMENTO**  
CALIFORNIA

Downtown Permits Center  
1231 I Street, #200  
Sacramento, CA 95814-2998  
North Permits Center  
2101 Arena Blvd., Suite 200  
Sacramento, CA 95834

ADDRESS 1575 WOODLAND OAKS Wy PERMIT NO. 0604179

INSPECTION COMMENTS	PERMIT DOCUMENTS
4-5-06 J. Rodgers CM 39,59179	

FINAL APPROVALS	
BUILDING	<i>[Signature]</i> 4/10/06
ELECTRICAL	
PLUMBING	
MECHANICAL	
FIRE	
SITE	

CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 3 of 8)		CF-4R
Project Address		Builder Name
Builder Contact	Telephone	Plan Number
HERS Rater	Telephone	Sample Group Number
Compliance Method (Prescriptive)		Climate Zone
Certifying Signature	Date	Sample House Number
Firm	HERS Provider	
Street Address:	City/State/Zip:	

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

**THERMOSTATIC EXPANSION VALVE (TXV)**

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

<input checked="" type="checkbox"/>	<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

**REFRIGERANT CHARGE MEASUREMENT**

Verification for Required Refrigerant Charge 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 (outdoor air dry-bulb 55 °F and above):

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 below 55 °F rater shall use the Alternative Charge Measure Procedure

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

<input checked="" type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> No	A copy of CF-6R (Installation Certificate) has been provided with refrigerant charge measurement documented.
--	--

**INSTALLATION CERTIFICATE**

(Page 3 of 12) CF-6R

Site Address 1575 Woodford Oaks Way Sacramento CA	Permit Number 0604179
--	--------------------------

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*

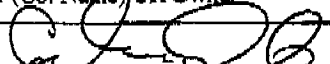
Equip Type (pkg. heat pump)	CEC Certified Mfr. Name and Model Number	# of Identical Systems	Efficiency (AFUE, etc.) <sup>1</sup> (≥CF-1R value)	Duct Location (attic, etc.)	Duct or Piping R-value	Heating Load (Btu/hr)	Heating Capacity (Btu/hr)
Rheem	RG-PN-07NAMGR	1	80% <del>eff</del>	Garage	4.3	70,000	75,000

*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 condenser	Rheem RAND-042JBZ	1	13 SEER	Attic	4.3	40,000	42,000
Coil	Goodman Cap F048BZA	1		Garage			

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.

If 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: 03-20-06

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

INSPECTION WED APRIL, 5 AFTERNOON

CONF # - 248159

**INSTALLATION CERTIFICATE**

(Page 4 of 12) CF-6R

Site Address <b>1575 Woodland Oaks Way Sacramento, Ca</b>	Permit Number <b>0604179</b>
--	---------------------------------

**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:**


- 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:			
	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 <b>3.5</b> 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:	<b>1400</b>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
3	Pass if Leakage Percentage ≤ 6% for Final or ≤ 4% at Rough-in: [100 x [ (Line # 1) / (Line # 2) ]]		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
ALTERATIONS: Duct System and/or HVAC Equipment Change-Out			
4	Enter Tested Leakage Flow in CFM from Pre-Test of Existing Duct System Prior to Duct System Alteration and/or Equipment Change-Out.		
5	Enter Tested Leakage Flow in CFM from Final Test of New Duct System or Altered Duct System for Duct System Alteration and/or Equipment Change-Out.	<b>223</b>	
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 or ≤ 4% at Rough-in [100 x [ (Line # 5) / (Line # 2) ]]		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
TEST OR VERIFICATION STANDARDS: For Altered Duct System and/or HVAC Equipment Change-Out Use one of the following four Test or Verification Standards for compliance:			
9	Pass if Leakage Percentage ≤ 15% [100 x [ <b>223</b> (Line # 5) / <b>1400</b> (Line # 2) ]]	<b>16%</b>	<input type="checkbox"/> Pass <input checked="" type="checkbox"/> Fail
10	Pass if Leakage to Outside Percentage ≤ 10% [100 x [ (Line # 7) / (Line # 2) ]]		<input type="checkbox"/> Pass <input checked="" type="checkbox"/> Fail <b>N/A</b>
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 checked="" type="checkbox"/> Fail <b>N/A</b>
12	Pass if Sealing of all Accessible Leaks and Verification by Smoke Test and Visual Inspection		<input checked="" 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

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: <b>03-30-06</b>

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

<b>INSTALLATION CERTIFICATE</b>		<b>(Page 5 of 12) CF-6R</b>
Site Address <i>1575 Woodland Oaks Way Sacramento, Ca</i>	Permit Number <i>0604179</i>	

**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 = 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 remeasurement, if between -3°F and -10°F)		°F

CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 1 of 8) CF-4R	
Project Address 1575 Woodland Oaks Way	Builder Name Heald Mechanical
Builder Contact Greg Heald	Telephone (916) 870 8550
HERS Rater Rebecca Olmstead	Telephone (916) 251 6777
Compliance Method (Prescriptive)	Climate Zone
Certifying Signature 	Date 3-30-06
Firm Olmstead HERS Rater	HERS Provider CHEERS
Street Address 7513 6th Street	City/State/Zip Rialinda, Ca 95673

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 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 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: 3.5 x 400	1400	<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.		
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)]]		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
TEST OR VERIFICATION STANDARDS: For Altered Duct System and/or HVAC Equipment Change-Out			
Use one of the following four Test or Verification Standards for compliance:			
9	Pass if Leakage Percentage ≤ 15% [100 x [(Line # 5) / (Line # 2)]]	100%	<input type="checkbox"/> Pass <input checked="" 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 checked="" 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