

CITY OF SACRAMENTO  
1231 I Street, Sacramento, CA 95814

Permit No: 0518513  
Insp Area: 2  
Thos Bros: 297C6

Site Address: 2646 14TH ST SAC  
Parcel No: 009-0322-003

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

**CONTRACTOR**  
PARK MECHANICAL  
7975 RAMONA AV  
SACRAMENTO CA 95826

**OWNER**  
MOORE FAMILY TRUST  
2646 14 TH ST  
SACRAMENTO CA 95818

**ARCHITECT**

**Nature of Work:** PAPERLESS PERMIT- HVAC-CUT IN SPLIT SYSTEM  
Smoke detectors are required. 2005 energy standards apply.

**CONSTRUCTION LENDING AGENCY:** I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name \_\_\_\_\_ Lender's Address \_\_\_\_\_

**LICENSED CONTRACTORS DECLARATION:** I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

License Class C20 License Number 335561 Date 11/28/05 Contractor Signature Elwood Vito

**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 the 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 contractor(s) to construct a 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: NEW CITY HALL  
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 \_\_\_\_\_ Applicant/Agent Signature \_\_\_\_\_

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

I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

EV 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 ACORD

Policy Number Z067716401

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.

Date 11/28/05 Applicant Signature Elwood Vito

**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.**

.92 Exempt from duct leakage test

CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 1 of 8) CF-4R			
Project Address	2646 14TH ST	Builder Name	PARK MECHANICAL
Builder Contact	JOHN MCALPINE	Telephone	916 452-4154
HERS Rater	DEBBIE THOMPSON	Telephone	916 835-4773
Compliance Method (Prescriptive)		Sample Group Number	6 of 7
Certifying Signature	<i>[Signature]</i>	Date	1-13-06
Firm	Capitol Energy Consultants	HERS Provider	CalCerts
Street Address:	1709 Adonis Way	City/State/Zip:	Sacramento, CA 95864

Copies to: BUILDER, HERS PROVIDER AND BUILDING DEPARTMENT

**HERS RATER COMPLIANCE STATEMENT**

The house was:  Tested  Approved as part of sample testing, but was not tested  
 As the HERS rater providing diagnostic testing and field verification, I certify that the house identified on this form complies with the diagnostic tested compliance requirements as checked  on this form. The HERS rater must check and verify that the new distribution system is fully ducted and correct tape is used before a CF-4R may be released on every tested building. The HERS rater must not release the CF-4R until a properly completed and signed CF-6R has been received for the sample and tested buildings.

- The installer has provided a copy of CF-6R (Installation Certificate).
- New 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:		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 checked="" type="checkbox"/> Heating) or <input checked="" type="checkbox"/> Measured Enter Total Fan Flow in CFM:		<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
<b>ALTERATIONS: Duct System and/or HVAC Equipment Change-Out</b>			
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
<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 ≤ 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 checked="" type="checkbox"/> <input checked="" type="checkbox"/>

System passes *[Signature]*

CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 3 of 8)		CF-4R
Project Address	2646 14TH ST	Builder Name PARK MECHANICAL
Builder Contact	JOHN MCALPINE 916 452-4154	Telephone Plan Number
HERS Rater	DEBBIE THOMPSON 916 835-4773	Telephone Sample Group Number 6 2 7
Compliance Method (Prescriptive)		Climate Zone 12
Certifying Signature	<i>[Signature]</i>	Date Sample House Number 6
Firm	Capitol Energy Consultants	HERS Provider CalCerts
Street Address:	1709 Adonis Way	City/State/Zip: Sacramento, CA 95864

Copies to: BUILDER, HERS PROVIDER AND BUILDING DEPARTMENT

### HERS RATER COMPLIANCE STATEMENT

The house was:  Tested  Approved as part of sample testing, but was not tested

As the HERS rater providing diagnostic testing and field verification, I certify that the house identified on this form complies with the diagnostic tested compliance requirements as checked on this form.

The 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 checked="" type="checkbox"/>
			Yes is a pass	Pass	Fail

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

Project Address <b>2646 14TH ST</b>	Builders Name <b>PARK MECHANICAL</b>
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**Copies to: BUILDER, HERS PROVIDER AND BUILDING DEPARTMENT**

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

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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Alternative Charge Measurement (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, rater shall use the Standard Charge Measure Procedure:

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

<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.
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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 ounces) (“-” = remove ounces)
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Alternative 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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CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 5 of 8) CF-4R			
Project Address	2646 14TH ST	Builder Name	PARK MECHANICAL
Builder Contact	JOHN MCALPINE 916 452-4154	Telephone	Plan Number
HERS Rater	DEBBIE THOMPSON 916 835-4773	Telephone	Sample Group Number
Certifying Signature	<i>[Signature]</i>	Date	6/7/06
Firm	Capitol Energy Consultants	HERS Provider	CalCerts
Street Address:	1709 Adonis Way	City/State/Zip:	Sacramento, CA 95864

Copies to: BUILDER, HERS PROVIDER AND BUILDING DEPARTMENT

### HERS RATER COMPLIANCE STATEMENT

The house was:  Tested  Approved as part of sample testing, but was not tested

As the HERS rater providing diagnostic testing and field verification, I certify that the house identified on this form complies with the diagnostic tested compliance requirements as checked on this form.

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

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

### MAXIMUM COOLING CAPACITY

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

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

### HIGH EER AIR CONDITIONER

Procedures for verification are available in RACM, Appendix RI.

1	<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	EER values of installed systems match the CF-1R							
2	<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	For split system, indoor coil is matched to outdoor coil							
3	<input checked="" type="checkbox"/>	<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					<table border="1"> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Pass</td> <td>Fail</td> </tr> </table>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pass	Fail
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
<input type="checkbox"/>	<input type="checkbox"/>										
Pass	Fail										

**INSTALLATION CERTIFICATE**

(Page 3 of 12) **CF-6R**

Site Address **2646 14TH ST**

Permit Number **0518513**

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*

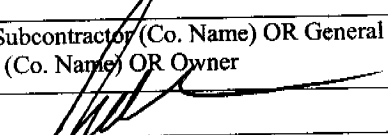
Equip Type (pkg. heat pump)	CEC Certified Mfr. Name and Model Number	# of Identical Systems	Efficiency (AFUE, etc.) <sup>1</sup> (≥CF-IR value)	Duct Location (attic, etc.)	Duct or Piping R-value	Heating Load (Btu/hr)	Heating Capacity (Btu/hr)
SPLIT/FURNACE	LENNOX G61MPV-36B-070	1	.92	ATTIC	4.2		

*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-IR value)	Duct Location (attic, etc.)	Duct R-value	Cooling Load (Btu/hr)	Cooling Capacity (Btu/hr)
A/C SPLIT	LENNOX HSXB15-042	1	14.5/12	ATTIC	4.2		

1. ≥ symbol reads *greater than or equal to what is indicated on the CF-IR 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: 1-13-06

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

<b>INSTALLATION CERTIFICATE</b>		<b>(Page 4 of 12) CF-6R</b>
Site Address <b>2646 14TH ST</b>	Permit Number <b>0518513</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:		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 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:	1400	✓    ✓
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.	350	
5	Enter Tested Leakage Flow in CFM from Final Test of New Duct System or Altered Duct System for Duct System Alteration and/or Equipment Change-Out.		
6	Enter Reduction in Leakage for Altered Duct System [ _____ (Line # 4) Minus _____ (Line # 5)] - (Only if Applicable)		
7	Enter Tested Leakage Flow in CFM to Outside (Only if Applicable)		✓    ✓
8	Entire New Duct System - Pass if Leakage Percentage ≤ 6% for Final or ≤ 4% at Rough-in [100 x [ _____ (Line # 5) / _____ (Line # 2)]]		<input type="checkbox"/> Pass <input type="checkbox"/> Fail
<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

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: 1-13-06

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 <b>2646 14TH ST</b>	Permit Number <b>0518513</b>	

**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



**INSTALLATION CERTIFICATE**

(Page 6 of 12) CF-6R

Site Address **2646 14TH ST**

Permit Number **0518513**

**Standard Charge Measurement Summary:**

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

Yes  No **System Passes**

**Alternate Charge Measurement Procedure** (outdoor air dry-bulb below 55 °F)

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

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

Actual liquid line length:		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)	

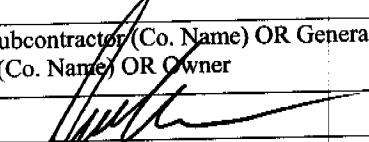
**Measured Airflow Method for Adequate Airflow Verification** available in RACM, Appendix RD2.6

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.

Yes  No **System Passes**

Installing Subcontractor (Co. Name) OR General Contractor (Co. Name) OR Owner	
Signature: 	Date: <b>1-13-06</b>

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

**FAN WATT DRAW**

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

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

**ADEQUATE AIRFLOW VERIFICATION**

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

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

**MAXIMUM COOLING CAPACITY**

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

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

**HIGH EER AIR CONDITIONER**

*Procedures for verification are available in RACM, Appendix RI.*

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

Installing Subcontractor (Co. Name) OR General Contractor (Co. Name) OR Owner	
Signature:	Date: 1-13-04

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



**FAXED**

NOV 21 2005

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

DEVELOPMENT SERVICES DIVISION  
 FAXED PERMIT APPLICATION (certain restrictions apply)  
 Fax # 916-264-1901

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

# 53178

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

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

Address: 2646 14th Street UNIT # \_\_\_\_\_ CONTRACT PRICE \$ 19,753.00

→ CONTACT PERSON: Linda → CONTACT PHONE: 452-4154

Property Owner: Moore Family Trust; Carolyn Carr Contractor: Park Mechanical, Inc. License # 335561  
 Address: 2646 14th Street Address: 7975 Ramona Avenue  
 City/State/Zip: Sacramento CA 95818 City/State/Zip: Sacramento, CA 95826  
 Phone: 916-712-3914 Phone: 916-452-4154 FAX: 916-452-5557

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

<input type="checkbox"/> RENOV (excluding ults) <input type="checkbox"/> TRAR-OPR <input type="checkbox"/> RESHEET <input type="checkbox"/> HOUSE <input type="checkbox"/> GARAGE # of STAIRS <u>65</u> #SQUARES _____ Materials: _____	<input checked="" type="checkbox"/> HVAC INSTALLATIONS (residential ONLY) <input type="checkbox"/> CHANGE-OUT <input checked="" type="checkbox"/> NEW <input type="checkbox"/> Heat Pump <input type="checkbox"/> Package <input type="checkbox"/> Split system <input type="checkbox"/> Roof mount <input checked="" type="checkbox"/> Cut-in <input type="checkbox"/> Heat pump or elect. unit to gas. <input type="checkbox"/> Well finance <input type="checkbox"/> Other (describe below)	<input type="checkbox"/> WATER HEATER (residential ONLY) <input type="checkbox"/> GAS <input type="checkbox"/> ELECTRIC <input type="checkbox"/> Change-out <input type="checkbox"/> Electric to Gas <input type="checkbox"/> Relocate <input type="checkbox"/> New	<input checked="" type="checkbox"/> MINOR ELECTRIC and/or MINOR PLUMBING (residential ONLY) <u>for HVAC</u> <input type="checkbox"/> Electric Service Change # amps _____ <input type="checkbox"/> New electric circuits <input type="checkbox"/> Re-wire <input type="checkbox"/> Water Service Replacement <input type="checkbox"/> Sewer Service Replacement <input type="checkbox"/> Gas Line Replacement <input type="checkbox"/> Re-plumb <input type="checkbox"/> Water <input type="checkbox"/> Waste	<input type="checkbox"/> PUBLIC UTILITIES SAFETY INSPECTION* (residential and single apartment units ONLY) <input type="checkbox"/> SSMUD <input type="checkbox"/> PGB *NOTE: Correction Notice forms will require an additional building permit
<input type="checkbox"/> SIDING <input type="checkbox"/> wood <input type="checkbox"/> T-111 <input type="checkbox"/> Hardz <input type="checkbox"/> vinyl <input type="checkbox"/> stucco	Value of duct work: \$ _____ Equipment: \$ _____ Cut-in: \$ _____ Note: Design Review approval may be required for gas line work.	<input type="checkbox"/> DRY ROT OR TERMITTE DAMAGE REPAIR (Describe locations below) Note: Design Review approval may be required in certain areas.		

DESCRIPTION OF WORK: Cut-in HVAC gas bleed-split system