

TRANSMISSION VERIFICATION REPORT

TIME : 02/27/2006 14:53  
 NAME : CITY OF SACRAMENTO  
 FAX : 9168085543  
 TEL : 9168085656  
 SER.# : BROH4J832840

DATE, TIME	02/27 14:51
FAX NO./NAME	99881992
DURATION	00:01:38
PAGE(S)	03
RESULT	OK
MODE	STANDARD ECM

**CITY OF SACRAMENTO  
 CASHIER'S WORKSHEET**

**ISSUED**  
 CITY OF SACRAMENTO  
 FEB 27 2006 *LMC*  
 DOWNTOWN PERMIT  
 CENTER

**PAID**  
 CITY OF SACRAMENTO

RECEIPT NUMBER: R0603238  
 TRANSACTION DATE: 02/27/2006  
 TRANSACTION AMOUNT: 80.89  
 NOTATION:

FEB 27 2006

~~NEW CITY HALL~~

APD #: **0602631**  
 SITE ADDRESS: 1331 44TH ST SAC  
 PARCEL: 008-0271-010

TYPE: Bldg Minor Permit  
 SUB-TYPE: RES  
 HOUSING: N  
 STATUS: **ISSUED**

Mixed Income Housing  
 Fee Program  
 ??

TRANSACTION LIST

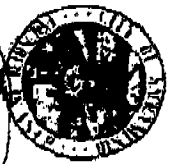
Type	Method	Description	Pymt Amount
Payment	Credit C	TEETER	80.89

RECEIPT ACCOUNT ITEM LIST

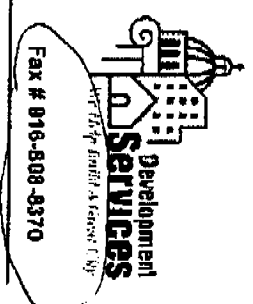
Class #	Description	Item #	Total Fee	Prev Pymt	Current Pymt
200	Permit--Building-Res	1100	75.00	.00	75.00
206	City Business Oper Tax	1730	1.12	.00	1.12
213	General Plan Surcharge	1750	1.77	.00	1.77
259	Bldg-Technology Surcharg	1750	3.00	.00	3.00

PBF10001

0602631



**PAID**  
**CITY OF SACRAMENTO**  
 FEB 27 2006  
 CITY HALL  
 Downtown Permit Office, New City Hall  
 915 J Street, 3rd Floor, Sacramento, CA 95814  
 Help Line: 1-916-808-5656 OR 1-866-EZ-PERMIT  
 Inspection: 1-916-808-7622



Activity #

**FAXED PERMIT APPLICATION**  
(certain restrictions apply)

Date: Feb 23 2006

*Faxed request must be received in this office by 3:00 P.M. to be processed the following workdays.  
 Note: Contractors must have a current certificate of Worker's Compensation Insurance.*

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

Job Address: 1331 44th Street  RESIDENTIAL  APARTMENTS (4+ units per building)  COMMERCIAL (limited)

Contact Person: David / Mark / Christine Unit # \_\_\_\_\_ Contract Price \$ 2,800

Property Owner: Fred Baker Contractor: Clark A/C & Heating License # 808427

Address: 1331 44th Street Address: 9357 Greenback Lane #8

City/State/Zip: Sacramento, CA 95819 City/State/Zip: Orangevale, CA 95662

Phone: (916) 451-1624 Phone: (916) 988-1658 Fax: (916) 988-1992

Nature of Work: (Provide detailed description of work & indicate type of work in selections below)  
 Description of Work: Remove existing furnace in basement

<input type="checkbox"/> Reroof (excluding tile) <input type="checkbox"/> Tear-Off <input type="checkbox"/> Resheet <input type="checkbox"/> House <input type="checkbox"/> Garage # Stories: _____ # Squares: _____ Material: _____ <input type="checkbox"/> Siding <input type="checkbox"/> Wood <input type="checkbox"/> T-111 <input type="checkbox"/> Horiz <input type="checkbox"/> Vert <input type="checkbox"/> Shuico	<input checked="" type="checkbox"/> HVAC Installations (Residential Only) <input type="checkbox"/> New <input checked="" type="checkbox"/> Change-out <input type="checkbox"/> New <input type="checkbox"/> Heat Pump <input type="checkbox"/> Package <input type="checkbox"/> Split system <input type="checkbox"/> Roof mount <input type="checkbox"/> Cut-in <input type="checkbox"/> Heat pump or elect unit to gas <input type="checkbox"/> Wall Furnace <input checked="" type="checkbox"/> Other (describe below) Value of duct work: _____ Equipment \$: _____ Cut-in \$: _____	<input type="checkbox"/> Water Heater (Gas/Elect/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 type="checkbox"/> Dry Rot or Termitte Damage Repair (Describe Extent Below) <input type="checkbox"/> Minor Electric and/or Minor Plumbing (Residential Only) <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"/> SMOUD <input type="checkbox"/> PG&E NOTE: Contractors notice items will require an additional building permit.
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\*Design Review approval may be required.

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Building Permit



PAID

Office Use Only

ISSUED CITY OF SACRAMENTO

Permit No: 060263 Date Issued: 02/27/06 Total Amount: 80,89

FEB 27 2006

DOWNTOWN PERMIT CENTER

NEW CITY MALL (916) 808-BLDG (2534)

Site Address: 1331 44th Street Name of Work: Change out of furnace in basement

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).

LICENSEE/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.

OWNER-BUILDER DECLARATION: I hereby affirm under penalty of perjury that I am exempt from the Contractors License Law for the following reason: 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 does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale.

I am 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 Professions 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.

I am 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: Feb 23 2006 Owner Signature: Mark Dalby

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.

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

Date: Feb 23 2006 Applicant/Agent Signature: Mark Dalby

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: State Compensation and Insurance Fund, Policy Number: 1800726-05, Expiration Date: 11-01-06

(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 will 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: Feb 23 2006 Applicant Signature: Mark Dalby

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 1706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.

1331 44th Street  
Site Address

Sacramento CA 95819

602631

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 Type (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)
	Carrier	1	0	floor/ wall	0	92000	100000
Split Sys	58MXA080F		0 HSPF				
G/E	0						

Cooling Equipment

Equip Type (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)
	0	1	0.00 SEER	floor/ wall	0	0	0
Split Sys	0		0 EER				
G/E	0						
	0						
Coll	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) 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.

Michael Becker 8/1/06  
Signature, Date 1035

Clark Air Conditioning and Heating

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

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

N/A furnace only change out

INSTALLATION CERTIFICATE

(Page 4 of 12)

CF- 6R

1331 44th Street

Sacramento CA 95819

602631

Site Address

Permit Number

INSTALLER COMPLIANCE STATEMENT FOR DUCT LEAKAGE

Copies to: Builder, HERS 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 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:			
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.			
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 < 16% [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) ]]			<input type="checkbox"/> Pass <input type="checkbox"/> Fail
12 Pass if Sealing of all Accessible Leaks and Verification by Smoke Test and Visual Inspection			<input type="checkbox"/> Pass <input type="checkbox"/> Fail
Pass if One of Lines # 9 through # 12 pass			<input type="checkbox"/> Pass <input type="checkbox"/> Fail

I, the undersigned, verify that the above diagnostic test results were performed in conformance with the requirements for compliance credit. I, the undersigned, also certify that the newly installed or retrofit Air-Distribution System Ducts, Plenums and Fans comply with Mandatory requirements specified in Section 150 (m) of the 2006 Building Energy Efficiency Standards.

Clark Air Conditioning and Heating

Signature

Date

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

N/A

Furnace only change out.

INSTALLATION CERTIFICATE

(Page 6 of 12)

CF-6R

1331 44th Street

Sacramento CA 95819

602631

Site Address

Permit Number

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.		
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 rereasurement, if between -3°F and -100°F)		F

**INSTALLATION CERTIFICATE**

(Page 6 of 12)

CF-6R

1331 44th Street

Sacramento CA 95819

602631

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.

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

**Weigh-In Charging Method for Refrigerant Charge**

Actual liquid line length:		ft
Manufacturer's Standard liquid line length:		ft
Difference (Actual - Standard):		ft
Manufacturer's correction (ounces per foot) _____ x difference in length = _____ ounces		
( + = add ) ( - = remove )		

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

Calculated Airflow: Cooling Capacity (Btu/hr)	X 0.033 (cfm/Btu-hr) =	CFM
Measured Airflow is	CFM (Measured airflow must be greater than the calculated airflow).	

**Alternate Charge Measurement Summary:**

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

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	System Passes
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\_\_\_\_\_  
Signature, Date

**Clark Air Conditioning and Heating**

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

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

**BAKER, Fred**  
Project Title

**1331 44th Street Sacramento CA 95819**  
Project Address

**David/ Mark/ Christine 988-1658**  
Documentation Author Telephone

**Prescriptive 12**  
Compliance Method (Prescriptive) Climate Zone

**Feb 24 2006**

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) **1900** ft<sup>2</sup> Average Ceiling Height: **9** ft  
 Maximum Allowed West Facing Fenestration Products Per Table 151-B or 151-C — (5% 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 WS-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:      raised 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 Ufactor (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.



BAKER, Fred

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, W1	Area (ft2)	U-factor2	U-factor Source3	SHGC4	SHGC Source5	Exterior Shading/Overhangs6, 7 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 §151(f)3C and in Section 3.2.3 of the Residential Manual
- 2) Enter values in this column are 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)
G/E	0	floor/ walls	0	Programmable	Split Sys
100000 BTU	HSPF				

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)
G/E	0 SEER	floor/ walls	0	Programmable	Split Sys
0 BTU	EER				

N/A

BAKER, Fred

Project Title

Date

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

A signed CF-4R Form must be provided to the building department for each home for which the following are required.

- Sealed Ducts (all climate zones) (Installer testing and certification and HERS rater field verification required.)
- TXVs, readily accessible (climate zones 2 and 8-15 only) (Installer testing and certification and HERS Rater field verification required.)
- Refrigerant Charge (climate zones 2 and 8-15 only) (Installer testing and certification and HERS Rater field verification required.)

OR

- Alternative to Sealed Ducts and Refrigerant Charge /TXVs (See Package D Alternative Package Features for Project Climate Zone in the RM Appendix B Table 151-C, Footnotes 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**

- 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.
- 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.
- 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.
- 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 Efficiencies.

**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.