

**CITY OF SACRAMENTO**

1231 I Street, Sacramento, CA 95814

PAID  
CITY OF SACRAMENTO

Permit No: 0611374

Insp Area: 4

Thos Bros: 277D5

Site Address: 280 RIVER RUN CR SAC

JUL 26 2006

Sub-Type: RES

Parcel No: 225-0973-024

Housing (Y/N): N

**CONTRACTOR**  
NEW CENTURY AIR  
3129 FITE CIR #130  
SACRAMENTO CA 95827

**OWNER AND DEVELOPMENT SERVICES**  
NEIGHBORHOODS PLANNING  
PAULSEN DIANE J  
280 RIVER RUN CR  
SACRAMENTO, CA 95833

**ARCHITECT**

**Nature of Work:** C/O SPLIT SYSTEM HVAC - GROUND MOUNT - PLACED IN THE SAME LOCATION AS THE EXISTING UNIT

**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 718740 Date 7-26-06 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.

Date 7-26-06 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.

[Initials] 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 1616422 Exp Date 01/01/2007

(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 7-26-06 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.**



**CITY OF SACRAMENTO**

www.cityofsacramento.org  
 Help Line: 1-916-808-5656 OR 1-866-EZ-PERMIT  
 Inspection Request: 1-916-808-7622

Downtown Permit Center  
 1231 I Street, Suite 200  
 Sacramento, CA 95814  
 North Permit Center  
 2101 Arena Blvd., Suite 200  
 Sacramento, CA 95834  
 Fax # 916-264-1901

0611374

**MINOR PERMIT APPLICATION**

Date: 7-20-00

*Faxed/web request must be received in this office by 3:00 P.M. to be processed the following workday. Contractors must have a current certificate of Worker's Compensation Insurance. Note: Work started before a Building Permit is issued will be subject to quad fee.*

*Permits requiring Plan Review are not eligible for the MINOR PERMIT PROGRAM. Design Review and Historic Preservation approval may be required if job address is located in those areas (additional forms may be required).*

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

Job Address: 280 River Run Cir Bid Type:  RESIDENTIAL  APARTMENTS (4+ units per building)  COMMERCIAL (limited)  
 CONTACT INFO Name: Dee Perez Unit # 8948 Contract Price \$ 8948  
 Property Owner: Diane Paulson Phone #: 916-362-2822 Email: admin2@newcenturyair.com  
 Address: 280 River Run Cir Contractor: New-Century Air Systems License #: 718740  
 City/State/Zip: Sacramento, CA 95833 Address: 329 Fite Cir #130  
 Phone: 916-929-4384 City/State/Zip: Sacramento Ca 95827 Phone: 916-362-2822 Fax: 916-362-9011  
 Nature of Work: Provide description of work & indicate type of work in selections below. Pre-Registered? YES  NO  Registration # \_\_\_\_\_

Description of Work: HVAC: replacement split system

|   |   |   |  |   |
|---|---|---|--|---|
| <input checked="" type="checkbox"/> Reroof (excluding tile)<br><input type="checkbox"/> Tear-Off<br><input type="checkbox"/> Reslice<br><input type="checkbox"/> House <input type="checkbox"/> Garage<br># Stories: _____<br># Squares: _____<br>Material: _____<br><input type="checkbox"/> Siding <input type="checkbox"/> Wood<br><input type="checkbox"/> T-111 <input type="checkbox"/> Horiz<br><input type="checkbox"/> Vinyl <input type="checkbox"/> Stucco | <input checked="" type="checkbox"/> HVAC Installations (Residential Only)<br><input type="checkbox"/> Change-out <input type="checkbox"/> New<br><input type="checkbox"/> Heat Pump<br><input type="checkbox"/> Package<br><input checked="" type="checkbox"/> Split system<br><input type="checkbox"/> Roof mount<br><input type="checkbox"/> Cut-in<br><input type="checkbox"/> Heat pump or elect. unit to gas.<br><input type="checkbox"/> Wall furnace<br><input type="checkbox"/> Other (describe below)<br>Value of duct work: _____<br>Equipment \$: <u>8948</u><br>Out-in: \$ <u>0</u> | <input type="checkbox"/> Water Heater (Residential Only)<br><input type="checkbox"/> Electric <input type="checkbox"/> Gas<br><input type="checkbox"/> Change-out<br><input type="checkbox"/> Electric to Gas<br><input type="checkbox"/> Relocate<br><input type="checkbox"/> New<br><input type="checkbox"/> Dry Rot or Termitite<br><input type="checkbox"/> Damage Repair<br><input type="checkbox"/> Flooring/Joists<br><input type="checkbox"/> Mudsill/Studs<br><input type="checkbox"/> Roof Structure<br><input type="checkbox"/> Exterior | <input type="checkbox"/> Minor Electric and/or Minor Plumbing (Residential Only)<br><input type="checkbox"/> Electric Service Change # amps _____<br><input type="checkbox"/> New electric circuits<br><input type="checkbox"/> Re-wire<br><input type="checkbox"/> Water Service Replacement<br><input type="checkbox"/> Sewer Service Replacement<br><input type="checkbox"/> Gas Line Replacement<br><input type="checkbox"/> Re-plumb<br><input type="checkbox"/> Water <input type="checkbox"/> Waste | <input type="checkbox"/> Public Utilities Safety Inspection (Residential and single apartment units Only)<br><input type="checkbox"/> SMUD <input type="checkbox"/> PG&E<br>* NOTE *<br>Correction Notice items will require an additional building permit. |
| Office Use Only: Parcel #:  | Date Received:  | Date Issued:  | Processor's Initials:  | Permit #:   |

# HEATING AND COOLING EQUIPMENT QUESTIONNAIRE

Applicant's name: New Century Air Phone: 302-2822

Project Address: 280 River Run Cir

Please check the appropriate boxes. Only check a box if it accurately and completely describes your proposed work, otherwise leave boxes blank.

## 1. GROUND-MOUNTED UNIT

- a.  There is an existing ground-mounted unit.
- The existing unit shall be removed. The new unit shall be placed in the same location as the existing unit and shall not exceed the size of the existing unit by more than 25%.
  - The new unit differs in location from the existing unit.
  - The new unit is fully screened behind a solid fenced area and will not be visible from any street views.
  - Existing shrubs or buildings will screen the unit from being visible from any street views.
- b.  There is no unit in the proposed location.
- The new unit will be fully screened behind a solid fenced area and will not be visible from any street views.
  - Existing shrubs or buildings will screen the unit from being visible from any street views.

## 2. ROOF-MOUNTED UNIT

- a.  There is an existing roof-mounted unit.
- The existing unit shall be removed. The new unit shall be placed in the same location as the existing unit and shall not exceed the size of the existing unit by more than 25%.
  - The new unit differs in location from the existing unit. The new unit shall be screened from street views by the building with no portion of the new unit being visible from any street views.
- b.  There is no existing roof-mounted unit
- The new unit shall be screened from street views by the building with no portion of the new unit being visible from any street views

By signing below, the applicant certifies that this form accurately describes the proposed work.

Applicant's signature: Dee Perez Date: 7-26-06

For City Staff use only \_\_\_\_\_ Counter Staff \_\_\_\_\_

- In a DR District Meets DR criteria?  Yes  No (route to DR staff)
- In a P area or listed (route to P staff)
- Not in DR/P area

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Site Address

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) |
|-----------------------------|--|------------------------|---|-----------------------------|------------------------|-----------------------|---------------------------|
| Split                       | TRANE  | 1                      | 80.00 AFUE  | Attic                       | R 4.2                  | 0                     | 80000                     |
|                             | TUD1B080A936                                     |                        |   |                             |                        |                       |                           |
|                             |  |                        |   |                             |                        |                       |                           |
|                             |  |                        |   |                             |                        |                       |                           |

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) |
|-----------------------------|--|------------------------|---|-----------------------------|------------------------|-----------------------|---------------------------|
| Split                       | TRANE  | 1                      | 14.00 SEER  | Attic                       | R 4.2                  | 0                     | 36000                     |
|                             | 2TTX4036B1                                       |                        | 12.00 EER   |                             |                        |                       |                           |
|                             |  |                        |   |                             |                        |                       |                           |
| Coil                        | ADP  |                        |   |                             |                        |                       |                           |
|                             | TE50436  |                        |   |                             |                        |                       |                           |

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.

 9-20-06  
 \_\_\_\_\_  
 Signature, Date

**New Century Air Systems**  
 \_\_\_\_\_  
 Installing Subcontractor (Co. Name) 50003  
 OR General Contractor (Co. Name) OR Owner 1295

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

280 RIVER RUN CIR

SACRAMENTO CA 95833

061374

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 checked="" type="checkbox"/> Cooling <input type="checkbox"/> Heating) or <input type="checkbox"/> Measured<br>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: |  | 1200            |  |
| 3 Pass if Leakage Percentage < 6% for Final or < 4% at Rough-in:<br>[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.  |  | 86              |  |
| 6 Enter Reduction in Leakage for Altered Duct System<br>[ (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<br>[100 x [ (Line # 6) / (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 [ 86 (Line # 5) / 1200 (Line # 2) ]]  |  | 7.16            | <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   |  |                 | <input 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.

*[Signature]* 9-20-06  
 Signature Date

New Century Air Systems

Installing Subcontractor (Co. Name) OR 50003  
 General Contractor (Co. Name) 1295

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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 = 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 |

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Standard Charge Measurement Summary:

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

|                          |                          |     |                          |    |               |
|--------------------------|--------------------------|-----|--------------------------|----|---------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Yes | <input type="checkbox"/> | 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.

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<br>(+ = 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"/> | <input type="checkbox"/> | Yes | <input type="checkbox"/> | No | System Passes |
|--------------------------|--------------------------|-----|--------------------------|----|---------------|

 9-20-06  
 Signature, Date

**New Century Air Systems**  
 Installing Subcontractor (Co. Name) OR 50003  
 General Contractor (Co. Name) OR Owner 1295

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

**PAULSEN, DIANE**

Project Title

**280 RIVER RUN CIR**

Project Address

**SACRAMENTO CA 95833**

**Dave Owen**

Documentation Author

**916-362-2822**

Telephone

**Prescriptive**

Compliance Method (Prescriptive)

**12**

Climate Zone

Date

**06/13/14**

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) **1350** ft<sup>2</sup> Average Ceiling Height: **8** 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: **1** Number of Dwelling Units: **1**

Floor Construction Type: **Slab** Slab/Raised Floor (circle one or both)

Front Orientation: **E = 090** 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.



**PAULSEN, DIANE**

**280 RIVER RUN CIR**

Project Title

Date

**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<br>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<br>furnace, heat pump, boiler, etc. | Minimum Efficiency<br>(AFUE or HSPF) | Distribution Type and Location<br>(ducts, attic, etc.) | Duct or Piping R-Value | Thermostat Type    | Configuration (split or package) |
|---|--------------------------------------|--|------------------------|--------------------|----------------------------------|
| <b>Furnace</b>  | <b>80.00 AFUE</b>                    | <b>Attic</b>   | <b>R 4.2</b>           | <b>Programable</b> | <b>Split</b>                     |
| <b>80</b>   | <b>kBTU</b>                          |  |                        |                    |                                  |
|   |                                      |  |                        |                    |                                  |
|   |                                      |  |                        |                    |                                  |

| Cooling Equipment Type and Capacity<br>(A/C, Heat Pump, Evap Cool) | Minimum Efficiency<br>(SEER or EER) | Duct Location<br>(attic, etc.) | Duct R-Value | Thermostat Type    | Configuration (split or package) |
|--|-------------------------------------|--------------------------------|--------------|--------------------|----------------------------------|
| <b>A/C</b>   | <b>14.00 SEER</b>                   | <b>Attic</b>                   | <b>R 4.2</b> | <b>Programable</b> | <b>Split</b>                     |
| <b>36</b>  | <b>kBTU</b>                         |                                |              |                    |                                  |
|  |                                     |                                |              |                    |                                  |
|  |                                     |                                |              |                    |                                  |

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**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.

|                          |  |
|--------------------------|--|
| <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 RM Appendix B Table 151-C, Footnotes 7-14. |
|--------------------------|---|

OR

|                          |   |
|--------------------------|---|
| <input type="checkbox"/> | 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 Input1 (kW or Btu/hr) | Tank Capacity (gallons) | Energy Factor1 or Thermal Efficiency | Standby1 Loss (%) | Tank External Insulation R-Value |
|-----------------------------|-------------------|------------------|-----------------------------|-------------------------|--------------------------------------|-------------------|----------------------------------|
|                             |                   |                  |                             |                         |                                      |                   |                                  |
|                             |                   |                  |                             |                         |                                      |                   |                                  |

**System serving multiple dwelling units**

| Water Heater Type/Fuel Type | Distribution Type | Number in System | Rated Input1 (kW or Btu/hr) | Tank Capacity (gallons) | Energy Factor1 or Thermal Efficiency | Standby1 Loss (%) | Tank External Insulation R-Value |
|-----------------------------|-------------------|------------------|-----------------------------|-------------------------|--------------------------------------|-------------------|----------------------------------|
|                             |                   |                  |                             |                         |                                      |                   |                                  |
|                             |                   |                  |                             |                         |                                      |                   |                                  |

1 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 3/4 inches or greater in diameter shall be thermally insulated as specified by Section 150 (j) 2 A or 150 (j) 2 B.

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**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   | WS-4R<br>N/A; Performance Calculation  |             |
| <input type="checkbox"/> | Cool Roof   | Required. Attach CRRC Label to Forms.  |             |
| <input type="checkbox"/> | Dedicated Hydronic Heating System                       | Performance Calculation<br>Required; Attach Run to Forms.                    |             |
| <input type="checkbox"/> | Combined Hydronic System                                | Performance Calculation<br>Required; Attach Run to Forms.                    |             |
| <input type="checkbox"/> | Gas Cooling   | N/A; Performance Calculation<br>Required.                                    |             |
| <input type="checkbox"/> | Buried Ducts  | N/A; Indicate on building plans.   |             |
| <input type="checkbox"/> | Kitchen Pipe Insulation                                 | See Section 5.6.2 Distribution Systems in Residential Manual.                |             |
| <input type="checkbox"/> | Multiple Water Heaters Per Dwelling Unit                | See Table 5-13 or use<br>Performance Calculation and<br>attach Run to Forms. |             |
| <input type="checkbox"/> | Central Water Heating System Serving Multiple Dwellings | Performance Calculation and<br>attach Run to Forms.                          |             |
| <input type="checkbox"/> | Non-NAECA Large Water Heater                            | CF-1R  |             |
| <input type="checkbox"/> | Indirect Water Heater                                   | See Table 5-13 or use<br>Performance Calculation and<br>attach Run to Forms  |             |
| <input type="checkbox"/> | Instantaneous Gas Water Heater                          | See Table 5-13 or use<br>Performance Calculation and<br>attach Run to Forms  |             |
| <input type="checkbox"/> | Solar Water Heating System                              | See Table 5-13 or use<br>Performance Calculation and<br>attach Run to Forms  |             |
| <input type="checkbox"/> | Wood Stove Boiler                                       | Performance Calculation and<br>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-6R part 4 of 12             |             |
| <input type="checkbox"/> | Refrigerant Charge           | CF-6R part 5 of 12             |             |
| <input type="checkbox"/> | Thermostatic Expansion Valve | CF-6R part 6 of 12             |             |

**PAULSEN, DIANE**

**280 RIVER RUN CIR**

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 HERS rater.

Designer or Owner (per Business and Professions Code)

Documentation Author

|   |   |
|---|---|
| Name:<br><b>Dave Owen</b>   | Name:<br><b>Dave Owen</b>   |
| Title/Firm:<br><b>New Century Air Systems</b>                         | Title/Firm:<br><b>New Century Air Systems</b>                         |
| Address:<br><b>3129 Fite Cir, # 130</b><br><b>Sacramento CA 95827</b> | Address:<br><b>3129 Fite Cir, # 130</b><br><b>Sacramento CA 95827</b> |
| Telephone:<br><b>916-362-2822</b>                                     | Telephone:<br><b>916-362-2822</b>                                     |
| License #:<br><b>718740</b>   |   |
| (signature) (date)  | (signature) (date)  |

**Enforcement Agency**

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

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

**CF-4R**

**280 RIVER RUN CIR - SACRAMENTO, CA 95833**

**New-Century Air Systems / 718740**

Project Address

Contractor Name / License No.

06-11374

Contractor Contact

Telephone

Permit Number

Max McKinney

916-698-4185

42092

HERS Rater

Telephone

Sample Group Number

September 26, 2006

CC14-1798382678

Certifying Signature

Date

Certificate Number

Firm:

Energy Analysis and Comfort Solutions, Inc.

HERS Provider: CalCERTS

Street Address:

PO Box 2233

City/State/Zip: Orangevale / 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 HERS rater must check and verify that the new distribution system is fully ducted and correct tape is used before a CF-4R may be released on every tested building. The HERS rater must not release the CF-4R until a properly completed and signed CF-6R has been received for the sample and tested buildings.

- The installer has provided a copy of the CF-6R (Installation Certificate).
- New Distribution system is fully ducted (i.e., does not use building cavities as plenums or platform returns in lieu of ducts).
- New systems where cloth backed, rubber adhesive duct tape is installed, mastic and drawbands are used in combination with cloth backed, rubber adhesive duct tape to seal leaks at duct connections.

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

| NEW CONSTRUCTION   |   |                 |  |
|--|---|-----------------|--|
|  |   | Measured Values |  |
| 1  | Duct Pressurization Test Results (CFM @ 25 Pa)  |                 |  |
| 1  | Enter Tested Leakage Flow in CFM:   | N/A             |  |
| 2  | Fan Flow: Calculated (Nominal <input checked="" type="radio"/> Cooling <input type="radio"/> Heating) or <input type="radio"/> Measured<br>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  | Entire New Duct System - Pass if Leakage Percentage < 6% [ 100 x ( Line 5 / Line 2 ) ]:   | Not Tested      | <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 ) ]:  | Not Tested      | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail |
| 10   | Pass if Leakage to Outside Percentage <= 10% [ 100 x ( Line 7 / Line 2 ) ]:   | Not Tested      | <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  | Not Tested      | <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 checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail |

<https://www.calcerts.com/cf4r print certificate.cfm?lots=0,42095,42097,42098,42094,42093,420...> 9/28/2006

**CERTIFICATE OF FIELD VERIFICATION & DIAGNOSTIC TESTING (Page 3-4 of 8)**

**CF-4R**

**280 RIVER RUN CIR - SACRAMENTO, CA 95833**

**New-Century Air Systems / 718740**

*Project Address*

*Contractor Name / License No.*

06-11374

*Contractor Contact*

*Telephone*

*Permit Number*

Max McKinney

916-698-4185

42092

*HERS Rater*

*Telephone*

*Sample Group Number*

September 26, 2006

CC14-1798382578

*Certifying Signature*

*Date*

*Certificate Number*

*Firm:*

Energy Analysis and Comfort Solutions, Inc.

HERS Provider: CalCERTS

*Street Address:*

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**HERS RATER COMPLIANCE STATEMENT**

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

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

**THERMOSTATIC EXPANSION VALVE (TXV):**

Access is provided for inspection. The procedure shall consist of visual verification that the TXV is installed on the system and installation of the specific equipment shall be verified.

HVAC System TXV

Pass  Fail

[https://www.calcerts.com/cf4r\\_print\\_certificate.cfm?lots=0,42095,42097,42098,42094,42093,420...](https://www.calcerts.com/cf4r_print_certificate.cfm?lots=0,42095,42097,42098,42094,42093,420...) 9/28/2006