

CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

CF-1R-PERF-NCB-01

Project Name: Pleasant Hills at Lincoln Shores - Plan01

Calculation Date/Time: 2012-11-14; 08:13

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Calculation Description: Base+RCV-15SEER-LLAH-0.42FanEff-400cfm/t-22shgc

Input File Name: Phls-p01-023.ext

A. GENERAL INFORMATION

Project Name:	Pleasant Hills at Lincoln Shores - Plan01		
Calculation Description	Base+ RCV, 15SEER, LLAH, 0.42FanEff, 400cfm/t, .22shgc		
Multifamily/Subdivision Name	Pleasant Hills at Lincoln Shores	Input File Name:	Phls-p01-023.ext
Project Location:	Plan 01	Rule Set Filename:	CA Res 2013.bin
CA City :	A City Name	Compliance Method:	2013 Standards v1.0
Zip code	99999	Special Programs:	NSHP
Climate Zone:	12		
Building Type:	Multifamily	Bldg Front Orientation (deg or cardinal):	0 (N)
Construction Type:	Newly Constructed Building	Number of Dwelling Units:	4
Total Cond. Floor Area (FT2):	7,000	Number of Zones:	7
Slab Area (FT2):	4,000	Number of Stories:	2
Addition Cond. Floor Area:	0	Average Ceiling Height (FT):	8 Ft
Addition Slab Area (FT2)	0	Fuel Type:	Natural Gas
		Glazing Percentage (%):	16.5

Building Complies with Computer Performance

Special Features are Required

HERS Verification is Required

ENERGY USE SUMMARY				
Energy Use (kTDV/ft ² -yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	24.22	19.34	4.88	20.1%
Space Cooling	15.22	6.14	9.08	59.7%
IAQ Ventilation	0.88	0.88	0.00	0.0%
Water Heating	21.19	20.22	0.97	4.6%
Photovoltaic Offset	---	-2.12	---	---
TOTAL	61.51	44.46	14.93	24.3%

Detailed help on using the CF-1R Certificate of Compliance is available via the Internet by either scanning the QR code or browsing to <http://www.title24energycode.org/t24help/cf1r.aspx>.



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B. REQUIRED SPECIAL FEATURES

Design features described in this Special Features section shall be specified on the building design plans and installed or constructed in accordance with all applicable manufacturer specifications and all applicable requirements given in Title 24, Part 6 as verified by the Enforcement Agency.

1.	Radiant Barriers installed	The radiant barriers installed in this building shall meet eligibility and installation criteria as specified in Reference Residential Appendix RA4.2.2.
2.	Cool Roofing products installed	Cool roof products installed on this building qualifying for compliance with Sections 141(a)1.B, 143(a)1 or 149(b) 1 B,, 151(f)12, or 152(b)1H shall be rated and labeled by the Cool Roof Rating Council in accordance with Section 10-113 of the standards.
3.	Non-default values used	This building incorporates non-standard Duct R-value.

C. REQUIRED COMPLIANCE DOCUMENTS FOR NON-HERS MEASURES

All measures listed in this table shall be installed or constructed in accordance with all applicable manufacturer specifications and all applicable requirements given in Title 24, Part 6 as verified by the Enforcement Agency. The following forms are required for final.

MEASURE VERIFICATION		Certificate of Installation (CF-2R)
1.	Envelope Insulation, Cool Roof, and Fenestration Values	ENV-tbd
2.	Proper Insulation Installation	ENV-tbd
3.	Envelope Air Sealing Requirements	ENV-tbd
4.	Attic Ventilation	ENV-tbd
5.	Kitchen and Cabinet Lighting Wattage, and both Indoor and Outdoor Mandatory Lighting Controls	LGT-01
6.	High Efficacy Verification for LED and Ballasts	LGT-02
7.	Space Conditioning Systems	MECH-tbd
8.	Evaporatively Cooled Condensing Units	MECH-tbd
9.	Evaporative Coolers	MECH-tbd
10.	ICE Storage Air Conditioners	MECH-tbd
11.	Water Heating Systems	PLMB-01
12.	Solar Water Heating	PLMB-tbd
13.	Pool and Spa	PLMB-tbd

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D. MEASURES THAT REQUIRE HERS VERIFICATION

Measures listed in this table require field testing or verification by the installing contractor and a certified HERS Rater as documented on the applicable Required Compliance Documents. The following forms are required for final.

Measure (Table Reference)		Required Compliance Documents	
		Certificate of Installation (CF-2R)	Certificate of Verification (CF-3R)
1.	Building Envelope Sealing (E)	E-20	E-20
2.	High Quality Insulation Installation (E)	ENV-21, ENV-22, ENV-23, ENV-24	ENV-21, ENV-22, ENV-23, ENV-24
3.	Duct Sealing (F)	MECH-20, MECH-21	MECH-20, MECH-21
4.	Air Handler Fan Efficacy and system Airflow (F)	MECH-22	MECH-22
5.		tbd	tbd
6.	Energy Efficiency Ratio (EER) or SEER (F)	tbd	tbd
7.	Refrigerant Charge <u>OR</u> Charge Indicator Display (F)	tbd	tbd
8.	Supply Duct Surface Area (F)	tbd	tbd
9.	Supply Duct R-value-Buried Ducts (F)	tbd	tbd
10.	Supply Duct Location (F)	tbd	tbd
11.	Continuous Whole-Building Mechanical Ventilation Airflow (ASHRE 62.2) (E)	tbd	tbd
12.	Intermittent Whole-Building Mechanical Ventilation Airflow (ASHRE 62.2) (E)	tbd	tbd
13.	Verification of Air Filter Device Design (F)	tbd	tbd
14.	Verification of Return Duct Design (F)	tbd	tbd
15.	Verification of Prescriptive Bypass Duct Requirements (F)	tbd	tbd
16.	System Airflow Verification – Altered HVAC System (F)	tbd	tbd

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E. BUILDING INFORMATION																	
Dwelling Unit Name	Number of Dwelling Units	Dwelling Unit CFA (FT2)	Number of Bedrooms	Number of Zones	Whole-Building Ventilation System Name	Whole-Building Continuous Ventilation Airflow Rate (cfm)	HERS MECH td HERS Verified Mech Ventilation Airflow Rate Target (cfm)	Standalone Ventilation System Fan Efficacy(W/cfm)	Whole-Building Ventilation Heat Recovery Effectiveness	HERS MECH td HERS Verified CFI Air Handler Efficacy Target (W/cfm)	HERS MECH td HERS Verified CFI Air Handler Airflow Target (cfm)	HERS ENV 20 Verified Envelope Leakage Target (CFM50h/ACH50)	HERS ENV 21 HERS Verified Insulation Installation (QII)	Water Heating System Name	HERS PLMB 21 Dwelling Unit DHW ¹ HERS Verified Distribution	HERS PLMB 22 Central System DHW ¹ HERS Verified Distribution	Status
Plan01	2	800	2	1	exh50	31	31	.25	n/a	n/a	n/a	n/a	no	DHW1	yes	yes	N
Plan02	4	1000	2	1	HR75	33	33	1.5	.62	n/a	n/a	n/a	no	DHW2	n/a	n/a	E
Plan03	2	1400	3	2	CFI-OA	37	n/a	n/a	n/a	0.58	350	n/a	no	DHW1	yes	yes	A
Plan04	1	2000	4	3	CFI-Mix	58	n/a	n/a	n/a	0.58	350	n/a	no	DHW1	no	no	N
¹ distribution Types that are not required to be HERS verified shall be verified by the enforcement agency.																	
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F. DWELLING UNIT AND ZONE INFORMATION																		
Dwelling Unit Name	Zone Type	Zone Name	Floor Area (ft ²)	Average Ceiling Height	Conditioned	Thermostat Type	Natural Ventilation Height (FT)	Vent Area (FT2)	HVAC System Name	HERS MECH 20	HERS MECH 22	HERS MECH 23	HERS MECH tbd	Status				
Plan01	Residence	101	800	8.0	yes	Setback	2.0	Std	HVAC1	6	0.58	SEER 14	yes	no	no	yes	no	N
Plan02	Residence	201	1000	8.0	yes	Setback	2.0	Std	HVAC1	no	0.35	27 EER	yes	no	no	yes	no	N
Plan03	Conditioned	301	700	8.0	yes	Setback	8.0	Std	HVAC2	15	0.25	no	yes	no	no	yes	no	N
Plan03	Conditioned	302	700	8.0	yes	Setback	8.0	Std	HVAC2	15	0.25	no	yes	no	no	yes	no	N
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G. OPAQUE SURFACES - Roof Details

Roof Type	Roof Pitch	Aged (or Initial?) Solar Reflectance	Thermal Emittance	Frame Type	Frame Depth (in)	Frame Spacing (in)	R-Value Above Deck	R-Value Below Deck	Status
Asphalt	5:12	0.20	0.85	Wood	3.5	24 o.c.	0.00	0.00	

Notes

H. OPAQUE SURFACES - Attic Details

Dwelling Unit	Frame Type	Area (ft ²)	U-factor	Cavity R-value	Continuous Insulation R-value	Actual Azimuth (deg)	Tilt	Solar Gains	Appendix JA4 Reference	Attic Ventilation	Status
Plan01	Wood	44	0.102	30	N/A	0	90	Yes	4.3.1 A3		N
Plan02	Wood	264	0.102	30	N/A	90	90	Yes	4.3.1 A3		N
Plan03	Wood	192	0.102	30	N/A	180	90	Yes	4.3.1 A3		N

Notes

I. OPAQUE SURFACES - Floor Details

Dwelling Unit	Surface Type	Frame Type	Area (ft ²)	U-factor	Cavity R-value	Continuous Insulation R-value	Tilt	Solar Gains	Appendix JA4 Reference	Status
Plan01	Slab Edge	N/A	44	0.102	N/A	5 Int	90	Yes	4.3.1 A3	N
Plan02	Slab Edge	N/A	264	0.102	N/A	0	90	Yes	4.3.1 A3	N
Plan03	Slab Edge	N/A	192	0.102	N/A	5 Ext	90	Yes	4.3.1 A3	N
Plan03	Raised Floor	N/A	192	0.102	19	5 Ext	90	Yes	4.3.1 A3	N

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J. MASS SURFACES

Dwelling Unit	Zone Name	Type	Area (FT2)	Thickness (inch)	Heat Capacity (btu/hr-ft2)	Status
Plan01	101	Carpeted Slab on Grade				N
Plan02	201	Carpeted Slab on Grade				N
Plan03	301	Carpeted Slab on Grade				N

Notes:

K. OPAQUE SURFACES – Wall Details

Surface Type	Frame Type	Area (ft ²)	U-factor	Cavity R-value	Continuous Insulation R-value	Actual Azimuth	Tilt	Solar Gains	Appendix JA4 Reference	Location/Comments	Status
1 Wall	Wood	44	0.102	13	5 Int	0	90	Yes	4.3.1 A3		N
2 Wall	Wood	264	0.102	13	0	90	90	Yes	4.3.1 A3		N
3 Wall	Wood	192	0.102	13	5 Ext	180	90	Yes	4.3.1 A3		N
4 Wall	Wood	288	0.102	13	0	270	90	Yes	4.3.1 A3		N
5 Wall	Wood	140	0.102	13	0	0	90	No	4.3.1 A3	To Garage	N
6 Wall	Wood	37	0.102	13	0	45	90	Yes	4.3.1 A3	Corner wall	N
7 Attic	Wood	1592	0.025	38	0	N/A	0	Yes	4.2.1 A21		N
8 Door	Wood	20	0.500	0	0	0	90	Yes	4.5.1 A4		N

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L. FENESTRATION SURFACES

Orientation	Surface	Area (ft ²)	U-factor	SHGC	Source	Actual Azimuth	Tilt	Film SHGC	Location/Glazing Type	Status
1 Wind Front (N)	1 Wall	24.0	0.400	0.350	NFRC	0	90	N/A	F1/Vinyl/Wood Operable L	N
2 Wind Front (N)	1 Wall	40.0	0.400	0.350	NFRC	0	90	N/A	F2/Vinyl/Wood Fixed Low	N
3 Wind Left (E)	2 Wall	24.0	0.400	0.350	NFRC	90	90	N/A	L1/Vinyl/Wood Operable L	N
4 Wind Back (S)	3 Wall	48.0	0.400	0.350	NFRC	180	90	N/A	B1/Vinyl/Wood Operable L	N
5 Door Back (S)	3 Wall	80.0	0.400	0.350	NFRC	180	90	N/A	B2/Vinyl/Wood Patio Door	N
6 Wind Right (W)	4 Wall	32.0	0.400	0.350	NFRC	270	90	N/A	R1/Vinyl/Wood Operable L	N
7 Wind Front (NE)	6 Wall	8.0	0.400	0.350	NFRC	45	90	N/A	C1/Vinyl/Wood Fixed Low	N
8 Skylight Front (N)	7 Attic	8.0	0.450	0.350	NFRC	0	23	N/A	SKY1/Vinyl/Wood Skylight	N

Notes

M. EXTERIOR SHADING

Window		Overhang							Side Fin				Status
Surface	Exterior Shade Type	Area (ft ²)	Width	Height	Depth	Height	Left Extension	Right Extension	Left Dist	Left Len	Right Dist	Right Len	N
1 Window	Standard	24.0	6.0	4.0	2.0	1.5	N/A	N/A	N/A	N/A	N/A	N/A	N
2 Window	Standard	40.0	8.0	5.0	2.0	1.5	N/A	N/A	N/A	N/A	N/A	N/A	N
3 Window	Standard	24.0	6.0	4.0	2.0	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N
4 Window	Standard	48.0	6.0	8.0	2.0	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N
5 Door	Standard	80.0	16.0	6.7	2.0	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N
6 Window	Standard	32.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N
7 Window	Standard	8.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N
8 Skylight	None	8.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N

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N. HVAC SYSTEMS

HVAC System Name	Heating System Type	Heating Efficiency	Cooling System Type	Cooling Efficiency SEER	Cooling Efficiency EER	duct system Name	Fan Type	Status
HVAC01	Furnace80	0.800 AFUE	AC Split	13.0	n/a	DuctSup01	PSC	N
HVAC02			AC packaged	13.0	n/a	Default01	BPM	N
HVAC03	HP		mini-split	18.4	15	ductless01		N

Notes:

O. HVAC SIZING

Dwelling Unit Name	Calculated Design Total Heating Load (Btuh)	Nominal System Heating Capacity (Btuh)	Calculated Design Latent Cooling Load (Btu/hr)	Calculated Design Sensible Cooling Load (Btu/hr)	Nominal System Cooling Capacity (ton)
Plan01					
Plan02					
Plan03					
Plan04					
Sizing Location	Winter Outside Design	Winter Inside Design	Summer Outside Design	Summer Inside Design	Summer Range
SACRAMENTO AP	26 F	70 F	98 F	75 F	35 F

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P. HVAC DUCT SYSTEMS

Duct System Name	Return Duct System Type	Return Duct R-Value	Return Duct Location	Supply Duct System Name	Supply Duct R-Value	Supply Duct Location	Status
DuctSup01	default	6	crawl Space	Sd-01	n/a	n/a	N
Default01	default	6	12-In-Attic	Default	8	12-In-Attic	N
ductless01	ductless	n/a					
noDucts01	no ducts	n/a					

Notes

Q. HVAC SUPPLY DUCT DETAIL DESIGN

Supply Duct System Name	Duct Segment Name	Duct Location	Duct Length (ft)	Duct Diameter (in)	Duct R-value	Buried Duct	Attic R-value	Attic Insulation Type	Status
Sd-01	1 Main	Attic	20	6.0	R-4.2	Deep	R-30	Fiberglass	N
Sd-01	2 Main	Attic	20	6.0	R-4.2	Deep	R-30	Fiberglass	N
Sd-01	3-trunk								
Sd-01	4-trunk								

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R. WATER HEATING SYSTEMS

Water Heating System Name	Water Heating System Type	Central Distribution Type	Dwelling Unit Distribution Type	DHW Water Heater Type	Energy Factor or Recovery Efficiency or Thermal Efficiency	Rated Output (Btuh)	Standby Loss Total (Btuh)	Pilot Energy (Btuh)	Standby Loss (%)	Water Heater Volume (gal)	Number of water heaters in System	Water Heater Tank Exterior Insulation	Supplemental Tank Volume (gal)	Supplemental Tank External Insulation R-value	Supplemental Tank Interior Insulation R-Value	Status
MF-Cen01b	DHW	n/a	Standard	Small Storage	0.60				N/A	50	1			n/a		N
Hydronic01	Hydronic	n/a	Standard	Small Storage	0.60				N/A	50	1			n/a		N
DHW-2	Comb Hydronic	n/a	Standard	Small Storage	0.60				N/A	50	1			n/a		N

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S. HYDRONIC HEATING SYSTEM PIPING

System Name	Pipe Length (FT)	Nominal Pipe Diameter (inch)	Insulation R-Value
hydronic01	20	.75	4

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Documentation Author's Declaration Statement: <ul style="list-style-type: none">I certify that this Certificate of Compliance documentation is accurate and complete.	
Name:	Signature:
Company:	Signature Date:
Address:	If Applicable CEA or CEPE Certification Identification:
City/State/Zip:	Phone:
Responsible Building Designer's Declaration Statement: <ul style="list-style-type: none">I am eligible under Division 3 of the California Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.I certify that the energy features and performance specifications for the building design identified on this Certificate of Compliance conform to the requirements of Title 24, Parts 1 and 6 of the California Code of Regulations.The building design features identified on this Certificate of Compliance are consistent with the information provided to document this building design on the other applicable compliance documentation, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.	
Name:	Signature:
Company:	Signature Date:
Address:	License:
City/State/Zip:	Phone:

Registration Number:

Registration Date/Time:

HERS Provider Name: