GENERAL INFORMATION					
01	**Project Name**	Residential Building			
02	**Run Title**	Title 24 Analysis			
03	**Project Location**	1030 Thompson Lane			
04	**City**	Petaluma	05	**Standards Version**	2022
06	**Zip code**	94952	07	**Software Version**	CBECC-Res 2022.3.0
08	**Climate Zone**	2	09	**Front Orientation (deg/ Cardinal)**	0
10	**Building Type**	Single family	11	**Number of Dwelling Units**	1
12	**Project Scope**	Addition and/or Alteration	13	**Number of Bedrooms**	1
14	**Addition Cond. Floor Area (ft^2)**	316	15	**Number of Stories**	2
16	**Existing Cond. Floor Area (ft^2)**	718	17	**Fenestration Average U-factor**	0.41
18	**Total Cond. Floor Area (ft^2)**	1034	19	**Glazing Percentage (%)**	8.03%
20	**ADU Bedroom Count**	n/a	21	**ADU Conditioned Floor Area**	n/a
22	**Fuel Type**	All electric	23	**No Dwelling Unit:**	No

COMPLIANCE RESULTS	
01	**Building Complies with Computer Performance**
02	**This building incorporates features that require field testing and/or verification by a certified HERS rater under the supervision of a CEC-approved HERS provider.**
03	**This building incorporates one or more Special Features shown below**

ENERGY USE SUMMARY

Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft^2 -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft^2 -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0	40.29	0	54.4	0	-14.11
Space Cooling	0	17.38	0	11.1	0	6.28
IAQ Ventilation	0	0	0	0	0	0
Water Heating	0	27.62	0	16.59	0	11.03
Self Utilization/Flexibility Credit						
Efficiency Compliance Total	**0**	**85.29**	**0**	**82.09**	**0**	**3.2**
Photovoltaics		0		0		
Battery				0		
Flexibility						
Indoor Lighting	0	8.48	0	8.48		
Appl. & Cooking	0	42.73	0	42.42		
Plug Loads	0	36.31	0	36.31		
Outdoor Lighting	0	1.82	0	1.82		
TOTAL COMPLIANCE	**0**	**174.63**	**0**	**171.12**		

ENERGY USE INTENSITY

	Standard Design (kBtu/ft^2 - yr)	Proposed Design (kBtu/ft^2 - yr)	Compliance Margin (kBtu/ft^2 - yr)	Margin Percentage
Gross EUI[1]	19.35	19.76	-0.41	-2.12
Net EUI[2]	19.35	19.76	-0.41	-2.12

Notes
1. Gross EUI is Energy Use Total (not including PV) / Total Building Area.
2. Net EUI is Energy Use Total (including PV) / Total Building Area.

REQUIRED SPECIAL FEATURES

The following are features that must be installed as condition for meeting the modeled energy performance for this computer analysis.

- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

HERS FEATURE SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Verified heat pump rated heating capacity

BUILDING - FEATURES INFORMATION

01	02	03	04	05	06	07
Project Name	**Conditioned Floor Area (ft^2)**	**Number of Dwelling Units**	**Number of Bedrooms**	**Number of Zones**	**Number of Ventilation Cooling Systems**	**Number of Water Heating Systems**
Residential Building	1034	1	1	3	0	1

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft^2)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Status**
First Floor	Conditioned	HVAC System1	316	12.6	DHW Sys 1	New
First Floor (Existing)	Conditioned	HVAC System1	359	8.3	DHW Sys 1	Existing Unchanged

ZONE INFORMATION

01	02	03	04	05	06	07
Zone Name	**Zone Type**	**HVAC System Name**	**Zone Floor Area (ft^2)**	**Avg. Ceiling Height**	**Water Heating System 1**	**Status**
Second Floor (Existing)	Conditioned	HVAC System1	359	10.6	DHW Sys 1	Existing Unchanged

OPAQUE SURFACES

01	02	03	04	05	06	07	08	09	10	11
Name	**Zone**	**Construction**	**Azimuth**	**Orientation**	**Gross Area (ft^2)**	**Window and Door Area (ft2)**	**Tilt (deg)**	**Wall Exceptions**	**Status**	**Verified Existing Condition**
South Wall	First Floor	R-19 Wall	180	Back	180.9	9	90	Ex. w/ Siding	New	n/a
North Wall	First Floor	R-19 Wall	0	Front	180.9	20	90	Ex. w/ Siding	New	n/a
East Wall	First Floor	R-19 Wall	90	Left	177.3	0	90	Ex. w/ Siding	New	n/a
South Wall 2	First Floor (Existing)	Default Wall Prior to 1971	180	Back	134.8	18	90	none	Existing	No
North Wall 2	First Floor (Existing)	Default Wall Prior to 1971	0	Front	134.8	20	90	none	Existing	No
South Wall 3	Second Floor (Existing)	Default Wall Prior to 1971	180	Back	172.2	12	90	none	Existing	No
North Wall 3	Second Floor (Existing)	Default Wall Prior to 1971	0	Front	172.2	24	90	none	Existing	No
Interior Surface Wall	First Floor>>First Floor (Existing)	Default Wall Prior to 197	n/a	n/a	10.2	0	n/a		New	No
Interior Surface Wall (Ga	First Floor (Existing)	Default Wall Prior to 197	n/a	n/a	177.3	0	n/a		Existing	No
Interior Surface Wall 2	Second Floor (Existing)	Default Wall Prior to 197	n/a	n/a	10	0	n/a		Existing	No
Interior Surface Wall 3	Second Floor (Existing)	Default Wall Prior to 197	n/a	n/a	10	0	n/a		Existing	No
Roof 2	Second Floor (Existing)	Default Roof Prior to 197	n/a	n/a	359	n/a	n/a		Existing	No
Interior Surface Floor	Second Floor (Existing)	Default Floor No Crawlspa	n/a	n/a	359	n/a	n/a		Existing	No

OPAQUE SURFACES - CATHEDRAL CEILINGS

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Zone	Construction	Azimuth	Orientation	Area (ft^2)	Skylight Area (ft^2)	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Cool Roof	Status	Verified Existing Condition	Existing Construction
Roof	First Floor	R-30 Roof No Attic	0	Front	316	0	8	0.1	0.85	No	New	n/a	

ATTIC

01	02	03	04	05	06	07	08	09	10
Name	Construction	Type	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof	Status	Verified Existing Condition
Attic Second Floor (Existing)	Attic RoofSecond Floor (Existing)	Ventilated	8	0.1	0.85	No	No	Existing	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft^2)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading	Status	Verified Existing Condition
Window (Reused)	Window	South Wall	Back	180			1	9	0.58	Table 110.6-A	0.65	Table 110.6-B	Bug Screen	New	NA
New Glass Door	Window	North Wall	Front	0			1	20	0.34	NFRC	0.34	NFRC	Bug Screen	New	NA
Window	Window	South Wall 2	Back	180			1	18	0.58	Table 110.6-A	0.65	Table 110.6-B	Bug Screen	Existing	No
Window 2	Window	South Wall 3	Back	180			1	12	0.58	Table 110.6-A	0.65	Table 110.6-B	Bug Screen	Existing	No
Window 3	Window	North Wall 3	Front	0			1	24	0.58	Table 110.6-A	0.65	Table 110.6-B	Bug Screen	Existing	No

OPAQUE DOORS

01	02	03	04	05	06
Name	**Side of Building**	**Area (ft^2)**	**U-factor**	**Status**	**Verified Existing Condition**
Door	North Wall 2	20	0.5	Existing	No

SLAB FLOORS

01	02	03	04	05	06	07	08	09	10
Name	**Zone**	**Area (ft^2)**	**Perimeter (ft)**	**Edge Insul. R-value and Depth**	**Edge Insul. R-value and Depth**	**Carpeted Fraction**	**Heated**	**Status**	**Verified Existing Condition**
Slab	First Floor	316	50.7	none	0	80%	No	New	n/a
Slab 2	First Floor (Existing)	359	76.8	none	0	80%	No	Existing	No

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	**Surface Type**	**Construction Type**	**Framing**	**Total Cavity R-value**	**Interior / Exterior Continuous R-value**	**U-factor**	**Assembly Layers**
R-19 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-19	None / None	0.07	Inside Finish: Gypsum Board Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6 Exterior Finish: Wood Siding/sheathing/decking
Default Wall Prior to 1971	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.302	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Exterior Finish: Wood Siding/sheathing/decking

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07	08
Construction Name	**Surface Type**	**Construction Type**	**Framing**	**Total Cavity R-value**	**Interior / Exterior Continuous R-value**	**U-factor**	**Assembly Layers**
R-30 Roof No Attic	Cathedral Ceilings	Wood Framed Ceiling	2x10 @ 24 in. O. C.	R-30	None / None	0.035	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x10 Inside Finish: Gypsum Board
Default Wall Prior to 197	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O. C.	R-0	None / None	0.277	Inside Finish: Gypsum Board Cavity / Frame: no insul. / 2x4 Other Side Finish: Gypsum Board
Attic RoofSecond Floor (Existing)	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-0	None / 0	0.644	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
Default Roof Prior to 197	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O. C.	R-11	None / None	0.083	Over Ceiling Joists: R-1.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board
Default Floor No Crawlspa	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O. C.	R-0	None / None	0.196	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x12 Ceiling Below Finish: Gypsum Board

BUILDING ENVELOPE - HERS VERIFICATION

01	02	03	04	05
Quality Insulation Installation (QII)	**High R-value Spray Foam Insulation**	**Building Envelope Air Leakage**	**CFM50**	**CFM50**
Not Required	Not Required	N/A	n/a	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
Name	**System Type**	**Distribution Type**	**Water Heater Name**	**Number of Units**	**Solar Heating System**	**Compact Distribution**	**HERS Verification**	**Water Heater Name (#)**	**Status**	**Verified Existing Condition**	**Existing Water Heating System**
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)	New	NA	

WATER HEATERS - NEEA HEAT PUMP

01	02	03	04	05	06	07	08
Name	**# of Units**	**Tank Vol. (gal)**	**NEEA Heat Pump Brand**	**NEEA Heat Pump Model**	**Tank Location**	**Duct Inlet Air Source**	**Duct Outlet Air Source**
DHW Heater 1	1	40	Rheem	PROPH40 T2 RH37515 (40 gal, JA13)	Outside	First Floor (Existing)	First Floor (Existing)

WATER HEATING - HERS VERIFICATION

01	02	03	04	05	06	07
Name	**Pipe Insulation**	**Parallel Piping**	**Compact Distribution**	**Compact Distribution Type**	**Recirculation Control**	**Shower Drain Water Heat Recovery**
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	None	Not Required	Not Required

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
Name	**System Type**	**Heating Unit Name**	**Heating Equipment Count**	**Cooling Unit Name**	**Cooling Equipment Count**	**Fan Name**	**Distribution Name**	**Required Thermostat Type**	**Status**	**Verified Existing Condition**	**Existing HVAC System**
HVAC System1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	n/a	n/a	Setback	New	No	

HVAC - HEAT PUMPS

01	02	03	04	05	06	07	08	09	10	11	12	13
Name	System Type	Number of Units	Heating				Cooling			Zonally Controlled	Compressor Type	HERS Verification
			Heating Efficiency Type	HSPF/HSPF2/COP	Cap 47	Cap 17	Cooling Efficiency Type	SEER/SEER2	EER/EER2/CEER			
Heat Pump System 1	Ductless MiniSplit HP	1	HSPF	8.5	60000	54500	EERSEER	14	11	Not Zonal	Single Speed	Heat Pump System 1-hers-htpump

HVAC HEAT PUMPS - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Verified Airflow	Airflow Target	Verified EER/EER2	Verified SEER/SEER2	Verified Refrigerant Charge	Verified HSPF/HSPF2	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Not Required	0	Not Required	Not Required	No	No	Yes	Yes

HERS RATER VERIFICATION OF EXISTING CONDITIONS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Mario Bertacco	Documentation Author Signature: Mario Bertacco
Company: NRG Compliance	Signature Date: 04/03/2024
Address: 4480 Main St Suite B	CEA/ HERS Certification Identification (If applicable):
City/State/Zip: Riverside, CA 92501	Phone: 707-237-6957

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
2. I certify that the energy features and performance specifications identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
3. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

Responsible Designer Name: Bill Bagby	Responsible Designer Signature: Bill Bagby
Company: Bill Bagby Drafting	Date Signed: 04/03/2024
Address: 81 Purrington Road	License:
City/State/Zip: Petaluma, CA 94952	Phone: (707) 765-9113

CERTIFICATE OF INSTALLATION

Project Name:	MuirWoodLLCAdditionRevB	**Enforcement Agency:**	Petaluma, City of
Dwelling Address:	1030 Thompson Lane	**Permit Number:**	BLD23-6746
City and Zip Code	Petaluma, 94952	**Permit Application Date:**	2024-01-01

If more than one person has responsibility for installation of the items on this certificate, each person shall prepare and sign a certificate applicable to the portion of construction for which they are responsible. Alternatively, the person with chief responsibility for construction shall prepare and sign this certificate for the entire construction. The signer agrees that all applicable Mandatory Measures were met. Temporary labels are not to be removed before verification by the building inspector.

A. Fenestration/ Glazing

Includes all Windows, Skylights, Greenhouse or Bay Windows and Glazed Doors(>= 25% glazing area).Note: If meeting Exception 1 to 150.1(c)3A, Installing <= 3 square feet (ft^2) glass in door, it is assumed to meet the minimum required U-factor (0.30) and SHGC (0.23).

If meeting Exception 1 to 150.1(c)3A, Installing <= 3 square feet (ft^2) tubular skylight, it is assumed to meet the minimum required U-factor (0.55) and SHGC (0.30).

Doors with greater than or equal to 25 percent glazing area are considered glazed doors and are treated as fenestration products.

01	02	03	04	05	06	07	08	09	10	11	12
Tag ID	Manufacturer/ Brand	Fenestration Area (ft^2)	Orientation	Chromogenic	U-factor	Source	SHGC	Source	Fenestration Type	Exterior Shading Devices	Comments/Special Features
Window (Reused)	milgard	9.0000	180	No	0.58	NFRC	0.65	NFRC	Window	Standard bug screens	
New Glass Door	milgard	20.0000	0	No	0.34	NFRC	0.34	NFRC	Window	Standard bug screens	
Window	milgard	18.0000	180	No	0.58	NFRC	0.65	NFRC	Window	Standard bug screens	
Window 2	milgard	12.0000	180	No	0.58	NFRC	0.65	NFRC	Window	Standard bug screens	
Window 3	milgard	24.0000	0	No	0.58	NFRC	0.65	NFRC	Window	Standard bug screens	

B. Fenestration Installation	
01	The U-factor of the installed windows for new construction and existing buildings must be equal to or less than those listed on the CF1R.
02	The SHGC of the installed windows for new construction and existing buildings must be equal to or less than those listed on the CF1R in climate zones 2, 4 and 8-15. For climate zones 1, 3, 5 and 16 there is no SHGC requirement.
03	Temporary labels are not to be removed until verified by the building inspector.
04	The fenestration product manufacturer's installation specifications shall be followed when installing these products. The space between the fenestration product and rough opening shall be completely filled with insulation. If batt insulation is used, it is cut to size and placed properly around the fenestration product.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Installation documentation is accurate and complete.	
Documentation Author Name: Scott Sowle	Documentation Author Signature: Scott Sowle
Company: Homeowner - Scott Sowle	Signature Date: 2024-04-11
Address: 1030 Thompson Ln	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Petaluma CA 94952	Phone: 000-000-0000

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Installation is true and correct.
2. II am either: a) a responsible person eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation, and attest to the declarations in this statement, or b) I am an authorized representative of the responsible person and attest to the declarations in this statement on the responsible person's behalf.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I understand that a registered copy of this Certificate of Installation shall be posted or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to ensure this requirement is accomplished.
5. I understand that a registered copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to ensure this requirement is accomplished.

Responsible Builder/Installer Name: Scott Sowle	Responsible Builder/Installer Signature: Scott Sowle	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner) Homeowner - Scott Sowle	Position With Company (Title):	
Address: 1030 Thompson Ln	CSLB License:	
City/State/Zip: Petaluma CA 94952	Phone: 000-000-0000	Date Signed: 2024-04-11

CERTIFICATE OF INSTALLATION

Project Name:	MuirWoodLLCAdditionRevB	**Enforcement Agency:**	Petaluma, City of
Dwelling Address:	1030 Thompson Lane	**Permit Number:**	BLD23-6746
City and Zip Code	Petaluma, 94952	**Permit Application Date:**	2024-01-01

A. Roof/Ceiling Insulation

01	02	03	04	05	06	07	08	09	10
I.D.	**Manufacturer and Brand**	**Assembly/Framing Material**	**Assembly Thickness (inches)**	**Framing Size and Spacing**	**Insulation Type**	**Ceiling Insulation R-value**	**Insulation Depth (inches)**	**Continuous Insulation Above the Roof Deck R-value**	**Insulation Below the Roof Deck R-value**
Default Roof Prior to 197	owens corning	Wood Framed Ceiling	4.73	2x4 16InchOC	Fiberglass	11	n/a	n/a	n/a
R-30 Roof No Attic	owens corning	Wood Framed Ceiling	10.45	2x10 24InchOC	Fiberglass	30	n/a	n/a	n/a
Attic RoofSecond Floor (Existing)	owens corning	Wood Framed Ceiling	4.2	2x4 24InchOC	Fiberglass	0	n/a	0	n/a

B. Wall Insulation

01	02	03	04	05	06	07	08	09	10
I.D.	Manufacturer and Brand	Assembly/Framing Material	Assembly Thickness (inches)	Framing Size and Spacing	Insulation Type	Core/Cavity Insulation R-value	Insulation Depth (inches)	Continuous Exterior Insulation R-value	Continuous Interior Insulation R-value
R-19 Wall		Wood Framed Walls	6.5	2x6 16InchOC	Fiberglass	19	n/a	n/a	n/a
Default Wall Prior to 1971		Wood Framed Walls	4.5	2x4 16InchOC	Fiberglass	0	n/a	n/a	n/a
Default Wall Prior to 197		Wood Framed Walls	4.5	2x4 16InchOC	Fiberglass	0	n/a	n/a	n/a

C. Mass Insulation

This section does not apply to this project.

D. Raised Floor Insulation

01	02	03	04	05	06	07	08	09
I.D.	Manufacturer and Brand	Framing Material	Framing Size and Spacing	Insulation Type	Cavity Insulation R-value	Insulation Depth (inches)	Exterior Floor Insulation R-value	Concrete Fill
Default Floor No Crawlspa		Wood framed floor	2x12 16InchOC	None	0	n/a	n/a	false

E. Slab Floor/Perimeter Insulation (See Section F. For Insulation Requirements For Heated Slabs)

This section does not apply to this project.

F. Heated Slabs Insulation

01	All heated slabs shall be insulated as required by Section 110.8(g). Footings must meet required insulation levels.
02	Insulation shall be installed from the top of the slab, down 16 inches or to the frost line, whichever is greater. Climate zones 1-15 require R-5, and climate zone 16 requires R-10.

F. Heated Slabs Insulation	
03	Alternatively, vertical insulation from top of slab at inside edge of outside wall down to the top of the horizontal insulation. Horizontal insulation from the outside edge of the vertical insulation extending 4 feet toward the center of the slab in a direction normal to the outside of the building in plain view. Climate zones 1-5 require R-5, and climate zone 16 requires R-10 vertical and R-7 horizontal.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

G. Minimum Mandatory Measures	
01	**Insulation** - 110.8(a): All installed Insulation is certified and listed with Department of Consumer Affairs, Bureau of Household Goods and Services.
02	**Insulation** - 110.8(b): Urea formaldehyde foam insulation is protected by 4 mil polyethylene vapor retarder.
03	**Insulation** - 110.8(c): Flame spread and smoke density requirements of the California Building Code (CBC) are met.
04	**Raised Floor** - 150.0(d): All raised wood-frame floor have a minimum R-19 insulation or equivalent U-factor
05	**Slab Floor/Perimeter** - 150.0(l): Water absorption rate for the insulation material alone without facings is no greater than 0.3%; water vapor permeance rate is no greater than 2.0 perm/inch and is protected from physical damage and UV light deterioration.
06	**Above Grade Exterior Wall** - 150.0(c)1 and 150.1(c)6: All 2x4 wood-frame walls have a minimum R-13 insulation or equivalent U-factor not exceeding U-0.102.
07	**Above Grade Exterior Wall** - 150.0(c)2 and 150.1(c)6: All 2x6 wood-frame walls have a minimum R-20 insulation or equivalent U-factor not exceeding U-0.071.
08	**Roof Deck** - 150.0(a)1: All newly constructed attic systems have a maximum area-weighted average U-factor not exceeding U-0.184.
09	**Ceiling/Rafter Roof** - 150.0(a)2: All wood-frame ceiling have a minimum R-22 insulation or equivalent U-factor.
10	**Vapor Retarder** - 150(g)1: In Climate Zones 1 through 16, the earth floor of unvented crawl space shall be covered with a Class I or Class II vapor retarder. This requirement shall also apply to controlled ventilation crawl space for buildings complying with the Exception to Section 150.0(d).
11	**Vapor Retarder** - 150(g)2: In Climate Zones 14 and 16, a Class I or Class II vapor retarder shall be installed on the conditioned space side of all insulation in all exterior walls, vented attics and unvented attics with air-permeable insulation.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

H. Installed Insulation	
01	Installed insulation R-values are the same or greater than listed on the CF1R.
02	No gaps or voids between the insulation and framing.
03	No gaps between the sides or ends of batt insulation.
04	Loose-fill insulation must be installed to the minimum installed weight per square foot (density) of the manufacturer's cut sheet for the proposed R-value.
05	Batt insulation is not compressed (no stuffing of the insulation into the cavity) and is installed to its full thickness.
06	Insulation is cut around obstructions such as electrical boxes.
07	Batt insulation is delaminated around all plumbing and electrical lines in ceilings, walls and floors.
08	Band joists are insulated to the same R-value as the wall.
09	In all narrow cavities the insulation shall be cut to fit or filled with expanding foam.
10	Insulation was installed per manufacturer instructions.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

I. Wall Insulation	
01	When allowed by manufacturer, low expanding foam shall be used to fill gaps and voids around windows and doors. If not, the cavity must be air tight and filled completely with insulation. Batt insulation must be cut to width. No stuffing allowed.
02	Install wall insulation before installing tubs, showers and fireplaces.
03	Electric panels on walls separating conditioned and unconditioned space are sealed and insulated behind the panel with rigid insulation or expanding foam.
04	All walls of interior closets vented to the outside for HVAC or water heating equipment have the same R-value and air barrier as the exterior walls and ceiling. Doors are insulated and weather stripped.
05	Ducting not allowed in exterior walls unless insulated to R6 or greater and the insulation and ducting are not crushed.
06	Corner channels, wall intersections, and double sided shear walls insulated to the required R-value before enclosing the wall.

I. Wall Insulation	
07	Insulation that does not fill the cavity placed against exterior air barrier.
08	Band joists are insulated to the same R-value as the walls.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

J. Ceiling/ Roof Insulation	
01	Insulation extends to the outside edge of the exterior top plates and is flush against any ventilation dams/baffles.
02	Insulation is in direct contact with ceiling, so there are no gaps between the ceiling and the insulation.
03	For chimneys and flues, the insulation is in contact with the sheet metal collar.
04	Can lights are covered with insulation to the same depth as required by the CF1R for ceiling insulation. If not, an area weighted calculation is required to be turned in with this compliance document (CF1R-ENV-02-E).
05	Walkways and mechanical platforms insulated to the same R-value as required for the ceiling. If not, an area weighted calculation is required to be turned in with this compliance document (CF1R-ENV-02-E).
06	Insulate soffits by adding an air barrier and cover with insulation, or insulate the entire soffit including floor and walls.
07	Knee walls and skylight shafts are insulated to the wall R-value and in full contact with the interior air barrier. If framing on these surfaces is laid flat batt insulation is cut to fit around the framing. Batt insulation is not allowed to be draped over the framing.
08	Attic access doors insulated to the same R-value as ceiling. The insulation is permanently attached using adhesive or mechanical fasteners.
09	Attic access must be surrounded with a dam at least the same depth as the insulation to prevent loss of ceiling insulation.
10	Batt insulation cut to fit around cross bracings and truss webs in attic.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

K. Raised Floor Insulation	
01	Insulation in full contact with subfloor.

K. Raised Floor Insulation	
02	Insulation hangers spaced at 18 inches or less, insulation hangers must not compress insulation.
03	If netting or mesh is used, the cavity under the floor is filled and in contact with the subfloor.
04	If the basement is conditioned the walls adjacent to the crawlspace must meet minimum wall R-value requirements. This includes framed stem walls, and vertical concrete retaining walls.
05	If access to the crawl space is from the conditioned area, the raised floor must have an airtight insulated access hatch.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

L. Floor Above Garage Insulation	
01	Insulation must be in full contact with subfloor if the air barrier is at the band joist at the garage/house wall.
02	Insulation hangers spaced at 18 inches or less, insulation hangers must not compress insulation.
03	If netting or mesh is used, the cavity under the floor is filled and in contact with the subfloor.
04	If air barrier is at the perimeter of the garage, below conditioned subfloor, the insulation is placed on the garage ceiling. The perimeter of subfloor is also insulated.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

M. Cantilevered Floor Insulation	
01	Insulation in full contact with cantilevered subfloor. Insulation hangers spaced at 18 inches or less, insulation hangers do not compress insulation.
02	If netting or mesh is used, the cavity under the floor is filled and in contact with the subfloor.
03	Sealed blocking is installed between joists where wall rim joist would be located in the absence of a cantilever. Insulation is placed on both sides of this block.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

N. Attached Porch Roof Insulation	
01	The exterior insulated wall at the intersection with the porch roof is fully insulated above, below and behind the roof line.

N. Attached Porch Roof Insulation	
02	Where truss framing is used, airtight blocking is at the top and bottom of each wall/roof section and insulated.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Installation documentation is accurate and complete.	
Documentation Author Name: Scott Sowle	Documentation Author Signature: Scott Sowle
Company: Homeowner - Scott Sowle	Signature Date: 2024-04-11
Address: 1030 Thompson Ln	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Petaluma CA 94952	Phone: 000-000-0000

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Installation is true and correct.
2. II am either: a) a responsible person eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation, and attest to the declarations in this statement, or b) I am an authorized representative of the responsible person and attest to the declarations in this statement on the responsible person's behalf.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I understand that a registered copy of this Certificate of Installation shall be posted or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to ensure this requirement is accomplished.
5. I understand that a registered copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to ensure this requirement is accomplished.

Responsible Builder/Installer Name: Scott Sowle	Responsible Builder/Installer Signature: Scott Sowle	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner) Homeowner - Scott Sowle	Position With Company (Title):	
Address: 1030 Thompson Ln	CSLB License:	
City/State/Zip: Petaluma CA 94952	Phone: 000-000-0000	Date Signed: 2024-04-11

CERTIFICATE OF INSTALLATION

Project Name:	MuirWoodLLCAdditionRevB	**Enforcement Agency:**	Petaluma, City of
Dwelling Address:	1030 Thompson Lane	**Permit Number:**	BLD23-6746
City and Zip Code	Petaluma, 94952	**Permit Application Date:**	2024-01-01

A. Installed Lighting and Controls
Select Yes or No according to whether your work on the project includes each of the following types of lighting and controls. See sections B through H for applicable requirements.

01	High Luminous Efficacy luminaires installed in any interior rooms. (See Section B.)	Yes
02	JA8 compliant luminaires installed in any interior rooms. (See Section B.)	Yes
03	Recessed downlight luminaires in ceilings in any interior room (See Section C).	Yes
04	Light Sources in Enclosed or Recessed Luminaires (See Section D.)	Yes
05	Lighting controls in bathrooms (See Section E.)	Yes
06	Lighting controls in laundry rooms (See Section E.)	Yes
07	Lighting controls in utility rooms (See Section E.)	Yes
08	Lighting controls in garage (See Section E.)	Yes
09	Lighting controls in walk-in closets. (See Section E.)	Yes
10	Lighting controls in interior rooms except bathrooms, laundry rooms, utility rooms, and garages. (See Section E2.)	Yes
11	Screw Based luminaires. (See Section F.)	Yes
12	Internally illuminated address signs. (See Section G.)	Yes
13	Outdoor lighting and controls (See Section H.)	Yes
14	Parking Garages for eight or more Vehicles (See Section I)	No
15	Blank Electrical Boxes installed more than 5 feet from finished floor (See Section J)	No

B. High Luminous Efficacy Luminaires	
01	150.0(k)1A and Table 150.0-A: All luminaires are installed with: • Light sources of one of the lighting technologies specified under the "High Luminous Efficacy" column of Table 150.0-A; or • JA8 compliant light sources and the light sources are marked with a label reading "JA8-2022" or "JA8-2022-E". Exception 1: Integrated device lighting: Lighting integral to exhaust fans, kitchen range hoods, bath vanity mirros, and garage door openers, and non-removable lighting attached to ceiling fans. Exception 2: Navigation Lighting: Night lights, step lights, path lights less than 5 watts. Exception 3: Cabinet Lighting: Lighting internal to drawers, cabinetry, and linen closets with an efficacy of 45 lumens per watt or greater.
02	• Lighting shall have readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

C. Recessed Downlight LuminaIres in Ceilings	
01	150.0(k)1Ci: Do not contain screw based lamp sockets.
02	The luminaire is marked with "JA8-2022".
03	150.0(k)1Cii: Has label certifying the luminairea are air tight with air leakage less than 2.0 cfm at 75 Pascals when tested in accordance with ASTM E283. Exception: Recessed luminaires marked for use in fire-rated installations, and recessed luminaires installed in non-insulated ceilings.
04	150.0(k)1Ciii: Sealed with a gasket or caulk between the luminaire housing and ceiling, and all air leakage paths between conditioned and unconditioned spaces are sealed with a gasket or caulk, or be installed per manufacturer's instructions to maintain airtightness between the luminaire housing and ceiling. Exception: Recessed luminaires marked for use in fire-rated installations, and recessed luminaires installed in non-insulated ceilings.
05	150.0(k)1Civ: Meet the following requirements (California Electrical Code Section 410.116). A recessed luminaire that is not identified for contact with insulation shall have all recessed parts spaced not less than 1/2 inch from combustible materials. The points of support and the trim finishing off the openings in the ceiling shall be permitted to be in contact with combustible materials. A recessed luminaire that is identified for contact with insulation, Type IC, shall be permitted to be in contact with combustible materials at recessed parts, points of support and portions passing through or finishing off the opening in the building structure. Thermal insulation shall not be installed above a recessed luminaire or within 3 inches of the recessed luminaire's enclosure, wiring compartment, ballast, transformer, LED driver, or power supply unless the luminaire is identified as Type IC for insulation contact.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

D. Light sources in enclosed or recessed luminaires (other than recessed downlight luminaires in ceilings)	
01	150.0(k)1D: Light Sources in Enclosed or Recessed Luminaires that are not marked with the "JA8-2022-E", shall not be installed in enclosed or recessed luminaires.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

E. Lighting controls in bathrooms, garages, laundry rooms, utility rooms, and walk-in closets.	
01	150.0(k)2E: In bathrooms, garages, laundry rooms, utility rooms and walk-in closets, at least one installed luminaire is controlled by an occupancy or vacancy sensor providing automatic-off functionality.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

F. Lighting Controls in any interior rooms	
01	150.0(k)2Eii: For lighting internal to drawers and cabinetry with opaque fronts or doors, controls that turn light off when the drawer or door is closed shall be provided.
02	150.0(k)2F: Lighting in habitable spaces, including but not limited to living rooms, dining rooms, kitchens, and bedrooms, have readily accessible wall-mounted dimming controls that allow the lighting to be manually adjusted up and down. Forward phase cut dimmers controlling LED light sources in these spaces shall comply with NEMA SSL 7A. EXCEPTION 1: Ceiling fans may provide control of integrated lighting via a remote control. EXCEPTION 2:Luminaires connected to a circuit with controlled lighting power less than 20 watts; or controlled by an occupancy or vacancy sensor providing automatic-off functionality . EXCEPTION 3: Navigation lighting such as night lights, step lights, and path lights less than 5 watts, and lighting internal to drawers and cabinetry with opaque fronts or doors or with automatic off controls.
03	150.0(k)2A Lighting has readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF.
04	150.0(k)2B: No control bypasses a dimmer, occupancy sensor or vacancy sensor function where that dimmer or sensor has been installed to comply with Section 150.0(k)
05	150.0(k)2C: Lighting controls comply with the applicable requirements in Section 110.9.
06	150.0(k)2D: An Energy Management Control System (EMCS) or a multiscene programmable control can be used to comply with dimming, occupancy, and lighting control requirements in Section 150.0(k)2 if it provides the functionality of the specified control in accordance with Section 110.9, and the physical controls (readily accessible wall-mounted controls that allow the lighting to be manually turned ON and OFF).
07	150.0(k)2G: Independent Controls: Integrated lighting of exhaust fans is controlled independently from the fans. Undercabinet lighting, undershelf lighting, interior lighting of display cabinets, and switched outlets are controlled separately from ceiling installed lighting.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

G. Screw Based Luminaires	
01	150.0(k)1B: Screw based luminaires shall contain lamps that are marked with "JA8-2022" or "JA8-2022-E".
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

H. Address Signs	
01	150.0(k)4: Internally illuminated address signs shall either: • Comply with Section 140.8. Applicable nonresidential sign lighting compliance forms shall also be submitted, or • Consume no more than 5 Watts of power.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

I. Outdoor lighting and Controls	
01	150.0(k)1A and Table 150.0-A: High efficacy outdoor lighting or LED light sources are installed

I. Outdoor lighting and Controls	
02	150.0(k)3A: Outdoor lighting is controlled by a manual ON and OFF switch that permits one of the following automatic actions: • Controlled be a photocell and either a motion sensor or an automatic time switch control; • Controlled by an astronomical time clock control. Controls that override to ON shall not be allowed unless the override automatically returns the automatic control to its normal operation within 6 hours. An energy management control that provides the specified lighting control functionality and complies with all requirements applicable to the specified controls may be used to meet the above requirements.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

J. Lighting for Residential Garages for Eight or More Vehicles
This section does not apply to this project.

K. Blank Electrical Boxes
This section does not apply to this project.

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Installation documentation is accurate and complete.	
Documentation Author Name: Scott Sowle	Documentation Author Signature: Scott Sowle
Company: Homeowner - Scott Sowle	Signature Date: 2024-04-11
Address: 1030 Thompson Ln	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Petaluma CA 94952	Phone: 000-000-0000

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

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Company Name: (Installing Subcontractor or General Contractor or Builder/Owner) Homeowner - Scott Sowle	Position With Company (Title):	
Address: 1030 Thompson Ln	CSLB License:	
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CERTIFICATE OF INSTALLATION

Project Name:	MuirWoodLLCAdditionRevB	**Enforcement Agency:**	Petaluma, City of
Dwelling Address:	1030 Thompson Lane	**Permit Number:**	BLD23-6746
City and Zip Code	Petaluma, 94952	**Permit Application Date:**	2024-01-01

A. General Information

01	Dwelling Unit Name	Single Family Dwelling	02	Climate Zone	2
03	Dwelling Unit Total Conditioned Floor Area (ft^2)	1034	04	Number of Space Conditioning Systems in this dwelling unit.	2
05	Certificate of Compliance Type	Performance (CF1R-PRF)	06	Method Used to Calculate HVAC Loads (See Section 150.0(h))	ASHRAE Handbook
07	Calculated Dwelling Unit Sensible Cooling Load (Btu/h)	36000	08	Calculated Dwelling Unit Heating Load (Btu/h)	36000
09	Dwelling Unit Number of Bedrooms	1			

MCH-01d - Space Conditioning Systems Ducts and Fans - For use with Performance E+A+A Certificate of Compliance

B. Design Space Conditioning (SC) System Component Specifications from CF1R

This table reports the space conditioning system features that were specified on the registered CF1R-PRF compliance document for this project.

01	02	03	04	05	06	07	08	09	10	11	12
SC System ID/Name from parent CC-PRF	**SC System Type**	**Heating System Type**	**Cooling System Type**	**Central Fan Ventilation Cooling System Type**	**Distribution System Type**	**Required Thermostat Type**	**Cooling Zoning Type**	**Cooling System Compressor Speed**	**Low Leakage Air-Handling Unit Status**	**SC System Status**	**Duct System Status**
HVAC System1	Heat pump heating cooling	Ductless mini-split HP	Ductless mini-split HP	Not a CFVCS	No ducts	Setback	Not Zonal	Single Speed	No, credit is not taken	New	n/a

C. Design Space Conditioning (SC) System Compliance Requirements from CF1R

This table reports the space conditioning system features that were specified on the registered CF1R-PRF compliance document for this project.

01	02	03	04	05	06	07	08	09	10	11	12	13
SC System ID/Name from parent CC-PRF	Heating Efficiency Type	Minimum Heating Efficiency Value	Heat Pump Heating Capacity at 47 °F	Heat Pump Heating Capacity at 17 °F	Cooling Efficiency Type	Minimum Cooling Efficiency SEER/SEER2	Minimum Cooling Efficiency EER/EER2/CEER	Minimum Cooling System Airflow Rate (CFM/ton)	Maximum Fan Efficacy (W/CFM)	Modeled Duct R-Value	Central Fan Ventilation Cooling Airflow	Central Fan Ventilation Cooling Fan Efficiency
HVAC System1	HSPF	8.5	60000	54500	EER/SEER	14	11	0				

D. Installed Space Conditioning (SC) System Component Information

01	02	03	04	05	06	07	08	09	10	11	12	13
SC System ID/Name from parent CC-PRF	SC System Description of Area Served	Conditioned Floor Area Served by the System (ft^2)	Heating System Type	Cooling System Type	Number of Indoor Units for this System	Distribution System Type	SC System Thermostat Type	Cooling Zoning Type	Cooling System Compressor Speed Type	SC System Status	Duct System Status	Number of Ducted Indoor Units for this System
HVAC System1	1	534	Ductless mini-split HP	Ductless mini-split HP	1	No ducts	Setback	Not Zonal	Single Speed	New		
HVAC System1	main 2	500	Ductless mini-split HP	Ductless mini-split HP	1	No ducts	Setback	Not Zonal	Single Speed	New		

E. Space Conditioning (SC) System Alteration Type Determination

This section does not apply to this project.

F. Installed Heating Equipment Information (not heat pumps)

01	02	03	04	05	06	07	08	09	10	11
SC System ID/Name from parent CC-PRF	SC System Description of Area Served	Indoor Unit Name or Description of Area Served	Does Indoor Unit Provide CFI IAQ Ventilation?	Indoor Unit Duct Status	Heating Efficiency Type	Heating Efficiency Value	Heating Unit Manufacturer	Heating Unit Model Number	Heating Unit Serial Number	Rated Heating Capacity, Output (Btu/h)

G. Installed Cooling System Outdoor Condensing Unit or Package Unit Equipment Information (not heat pumps)

01	02	03	04	05	06	07	08	09	10
SC System ID/Name from parent CC-PRF	SC System Description of Area Served	Cooling Efficiency SEER/SEER2	Cooling Efficiency EER/EER2/CEER	Condenser or Package Unit Manufacturer	Condenser or Package Unit Model Number	Condenser or Package Unit Serial Number	System Cooling Capacity at Design Conditions (Btu/h)	Condenser Nominal Capacity (ton)	Condenser Rated Cooling Capacity (Btu/h))

H. Installed Split System Indoor Unit (Coil or Fan Coil) Equipment Information - applicable to DX or hydronic heating or cooling, coils and fan coil units

Systems with more than one indoor coil or fan coil unit (e.g. multi-split systems) shall provide information for each of the system indoor unit coils or fan coil units.

01	02	03	04	05	06	07	08	09
SC System ID/Name from CC-PRF	SC System Description of Area Served	Indoor Unit Name or Description of Area Served	Indoor Unit Type	Indoor Unit Duct Status	Does Indoor Unit Provide CFI IAQ Ventilation?	Indoor Coil or Fan Coil Unit Manufacturer	Indoor Coil or Fan Coil Unit Model Number	Indoor Coil or Fan Coil Unit Serial Number
HVAC System1	1	1	HP Coil	Ductless	No	GREE	4LIV09HP230V1AH	1723GS25849
HVAC System1	main 2	main 2	HP Coil	Ductless	No	Gree	4LIV09HP230V1AH	1723GS25867

I. Installed Heat Pump System - Split System Condensing Unit or Package Unit Equipment Information

01	02	03	04	05
SC System ID/Name from parent CC-PRF	SC System Description of Area Served	Condenser or Package Unit Manufacturer	Condenser or Package Unit Model Number	Condenser or Package Unit Serial Number
HVAC System1	1	Gree	MULTI42HP230V1E0	3923GS3494
HVAC System1	main 2	Gree	MULTI30HP230V1E0	3923GS53457

J. Installed Heat Pump System -Efficiency and Performance Compliance Information

01	02	03	04	05	06	07	08	09	10
SC System ID/Name from parent CC-PRF	SC System Description of Area Served	Heating Efficiency Type	Heating Efficiency Value	System Rated Heating Capacity at 47 °F	System Rated Heating Capacity at 17 °F	System Rated Cooling Efficiency SEER/SEER2	System Rated Cooling Efficiency EER/EER2/CEER	System Cooling Capacity at Design Conditions (Btu/h)	Condenser Nominal Capacity (ton)
HVAC System1	1	HSPF				14	11	42000	3.5
HVAC System1	main 2	HSPF				14	11	30000	2.5

K. Altered Space Conditioning System Duct Information (< 75% of duct system is altered; or duct system is not altered)

This section does not apply to this project.

L. Installed New or Complete Replacement Duct System Information

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
SC System ID/Name from parent CC-PRF	SC System Description of Area Served	Indoor Unit Name or Description of Area Served	Total Duct Length	Required New Duct R-Value (Unconditioned Space)	Supply Duct Location	New Supply Duct R-Value	Return Duct Location	New Return Duct R-Value	Exception from Min R-Value	Method of compliance with Airflow and Fan Efficacy Req's in 150.0(m)13	Number of Air Filter Devices on Indoor Unit	Can Approved Airflow Protocols be used to test this System?	Can Approved Fan Efficacy Protocol be used to test this System?	Indoor Unit Nominal Cooling capacity (ton)
Notes														

M. Installed Air Filter Device Information

Mandatory requirements for air filter devices are specified Section 150.0(m)12. The installer shall place a sticker in or near each filter grille that displays the design airflow rate for that filter grille/rack and the maximum allowed clean filter pressure drop at the design airflow rate. This will inform the occupant of the airflow vs pressure drop performance required for replacement air filters.

01	02	03	04	05	06	07	08	09	10	11	12	13
SC System ID/Name from parent CC-PR	SC System Description of Area Served	Indoor Unit Name or Description of Area Served	Air Filter Device Name or Description of Area Served	Air Filter Rack Type	Design Airflow Rate for Air Filter Device (cfm)	Air Filter Nominal Depth (inch)	Air Filter Nominal Length (inch)	Air Filter Nominal Width (inch)	Air Filter Calculated Nominal Face Area (inch2)	Air Filter Required Minimum Face Area (inch2)	Face Area Compliance	Design Allowable Pressure Drop for Air Filter Device (inch W.C.)

N. Air Filter Device Requirements	
01	All recirculated air and all outdoor air (including make up air) supplied to the occupiable space is filtered before passing through the system's thermal conditioning components.
02	The space conditioning system shall be designed to accommodate the clean-filter pressure drop imposed by the system air filter device(s). The design airflow rate and maximum allowable clean-filter pressure drop at the design airflow rate applicable to each air filter shall be determined by the system designer. The system installer shall affix a sticker/label to each system air filter grille/rack location that discloses the filter's design airflow rate and the filter's maximum allowable clean-filter pressure drop at the design airflow rate. The sticker/labels shall be permanently affixed to the air filter grille/rack, readily legible, and visible to a person replacing the air filter.
03	All system air filter devices shall be located and installed in such a manner as to allow access and regular service by the system owner.
04	The system shall be provided with air filters having a designated efficiency equal to or greater than MERV 13 when tested in accordance with ASHRAE Standard 52.2, or a particle size efficiency rating equal to or greater than 50% in the 0.30 to 1.0 µm range and equal to or greater than 85 percent in the 1.0 - 3.0 µm range when tested in accordance with AHRI Standard 680.
05	The system shall be provided with air filters that have been labeled by the manufacturer to disclose efficiency and pressure drop ratings that conform to the efficiency and pressure drop requirements for the air filter grilles/racks..
06	Filter racks or grilles shall use gaskets, sealing, or other means to close gaps around inserted filters and prevent air from bypassing the filter.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met	

O. HERS Verification Requirements for Duct Systems

01	02	03	04	05	06	07	08	09	10	11
SC System ID/ Name from parent CC-PRF	SC System Description of Area Served	Indoor Unit Name or Description of Area Served	Exemption From Duct Leakage Requirements	MCH-20 Duct Leakage Test	MCH-21 Duct Location Verification	MCH-22 AHU Fan Efficacy (W/cfm)	MCH-23 AHU Airflow Rate (cfm/ton)	MCH-28 Return Duct Design Table 150.0-B or C	MCH-29 Supply Duct Surface Area R-Value Buried Ducts	MCH30 Central Fan Ventilation Cooling Credit

P. HERS Verification Requirements For Space Conditioning Equipment

01	02	03	04	05
SC System ID/ Name from parent CC-PRF	SC System Description of Area Served	MCH-25 Refrigerant Charge	MCH-26 Rated SC System Equipment Verification	MCH-33 VCHP Compliance Credit
HVAC System1	1	No	Yes	No
HVAC System1	main 2	No	Yes	No

Q. Space Conditioning Systems, Ducts and Fans - Mandatory Requirements and Additional Measures

Additional mandatory requirements from Section 150.0 that are not listed here may be applicable to some systems. These requirements may be applicable to only newly installed equipment or portions of the system that are altered. Existing equipment may be exempt from these requirements.

Heating Equipment	
01	Equipment Efficiency: All heating equipment must meet the minimum efficiency requirements of Section 110.1 and Section 110.2(a) and the Appliance Efficiency Regulations.
02	Controls: All unitary heating systems, including heat pumps, must be controlled by a setback thermostat. These thermostats must be capable of allowing the occupant to program the temperature set points for at least four different periods in 24 hours. See Sections 150.0(i), 110.2(b).
03	Sizing: Heating load calculations must be done on portions of the building served by new heating systems to prevent inadvertent undersizing or oversizing. See sections 150.0(h)1 and 2).
04	Furnace Temperature Rise: Central forced-air heating furnace installations must be configured to operate at or below the furnace manufacturer's maximum inlet-to-outlet temperature rise specification. See Section 150.0(h)4.
05	Standby Losses and Pilot Lights: Fan-type central furnaces may not have a continuously burning pilot light. Section 110.5 and Section 110.2(d).
Cooling Equipment	
06	Equipment Efficiency: All cooling equipment must meet the minimum efficiency requirements of Section 110.1 and Section 110.2(a) and the Appliance Efficiency Regulations.
07	Refrigerant Line Insulation: All refrigerant line insulation in split system air conditioners and heat pumps must meet the R-value and protection requirements of Section 150.0(j)2 and 3, and Section 150.0(m)9.
08	Condensing Unit Location: Condensing units shall not be placed within five (5) feet of a dryer vent outlet. See Section 150.0(h)3A.
09	Liquid Line Filter Drier: A liquid line filter drier shall be installed according to the manufacturer's specifications 150.0(h)3B
10	Sizing: Cooling load calculations must be done on portions of the building served by new cooling systems to prevent inadvertent undersizing or oversizing. See Section 150.0(h)1 and 2.
Air Distribution System Ducts, Plenums and Fans	
11	Insulation: The minimum duct insulation value is R-6 or ducts can be uninsulated if the duct system is located entirely in conditioned space. Note that higher values may be required by the prescriptive or performance requirements. See Section 150.0(m)1B for exceptions.
12	Connections and Closures: All installed air-distribution system ducts and plenums must meet the requirements of CMC Sections 601.0, 602.0, 603.0, 604.0, 605.0 and ANSI/SMACNA-006-2006:

Q. Space Conditioning Systems, Ducts and Fans - Mandatory Requirements and Additional Measures Additional mandatory requirements from Section 150.0 that are not listed here may be applicable to some systems. These requirements may be applicable to only newly installed equipment or portions of the system that are altered. Existing equipment may be exempt from these requirements.	
Heat Pump Thermostat	
13	A thermostat shall be installed that meets the requirements of Section 110.2(b) and Section 110.2(c).
14	The thermostat shall be installed in accordance with the manufacturers published installation specifications
15	First stage of heating shall be assigned to heat pump heating.
16	Second stage back up heating shall be set to come on only when the indoor set temperature cannot be met.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT		
1. I certify that this Certificate of Installation documentation is accurate and complete.		
Documentation Author Name: Scott Sowle	Documentation Author Signature: Scott Sowle	
Company: Homeowner - Scott Sowle	Signature Date: 2024-04-11	
Address: 1030 Thompson Ln	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip: Petaluma CA 94952	Phone: 000-000-0000	

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Installation is true and correct.
2. II am either: a) a responsible person eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation, and attest to the declarations in this statement, or b) I am an authorized representative of the responsible person and attest to the declarations in this statement on the responsible person's behalf.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I understand that a registered copy of this Certificate of Installation shall be posted or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to ensure this requirement is accomplished.
5. I understand that a registered copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to ensure this requirement is accomplished.

Responsible Builder/Installer Name: Scott Sowle	Responsible Builder/Installer Signature: Scott Sowle	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner) Homeowner - Scott Sowle	Position With Company (Title):	
Address: 1030 Thompson Ln	CSLB License:	
City/State/Zip: Petaluma CA 94952	Phone: 000-000-0000	Date Signed: 2024-04-11

Digitally signed by California Home Energy Efficiency Rating Services (CHEERS). This digital signature is provided in order to secure the content of this registered document, and in no way implies Registration Provider responsibility for the accuracy of the information.

CERTIFICATE OF INSTALLATION

Project Name:	MuirWoodLLCAdditionRevB	**Enforcement Agency:**	Petaluma, City of
Dwelling Address:	1030 Thompson Lane	**Permit Number:**	BLD23-6746
City and Zip Code	Petaluma, 94952	**Permit Application Date:**	2024-01-01

A. System Information

Procedures for verification of High SEER/SEER2 and EER/EER2 Equipment are described in Reference Appendix RA3.4. Each HVAC system requiring verification must use a separate form.

01	Space Conditioning System Identification or Name	HVAC System1
02	Space Conditioning System Description of Area Served	1
03	Efficiency Metric	HSPF
04	Status: SEER/SEER2 Performance Compliance Credit Check	No
05	Status: EER/EER2 Performance Compliance Credit Check	No
06	Status: Heat Pump Heating Output Performance Compliance Check	Yes
07	Status: HSPF/HSPF2 Performance Compliance Credit Check	No
08	Directory used to certify product performance	AHRI
09	AHRI certification number for the installed space conditioning system from http://www.ahridirectory.org	9956595
10	Does the directory used to certify product performance require a specific air handler, furnace or fan coil make and model?	No
11	Does the directory used to certify product performance require a time delay relay (+TDR)?	Yes
12	Does the directory used to certify product performance require a TXV (+TXV)?	Yes

B. Rated Space Conditioning System Equipment Information from Nameplate of the Installed System

The data on the nameplate of the installed component shall conform to the data for the component as shown in the Directory used to certify product performance in order to demonstrate compliance.

01	02	03	04	Data from nameplate of installed system component					
				05	06	07	08	09	10
SC System ID/Name	SC System Description of Area Served	Indoor Unit Name or Description of Area Served	Installed Indoor Unit Type	Outdoor Condenser or Package Unit - Installed Manufacturer Name	Outdoor Condenser or Package Unit - Installed Model Number	Indoor Unit - Installed Manufacturer Name	Indoor Unit - Installed Model Number	Installed Furnace Manufacturer Name	Installed Furnace Model Number
HVAC System1	1	1	HP Coil	Gree	MULTI42HP 230V1E0	GREE	4LIV09HP23 0V1AH	n/a	n/a

C. Rated Space Conditioning System Equipment Information from Directory of Certified Product Performance

The data on the nameplate of the installed component shall conform to the data for the component as shown in the Directory used to certify product performance in order to demonstrate compliance.

01	02	03	04	Data from the Directory used to certify product performance for the rated system component					
				05	06	07	08	09	10
SC System ID/Name	SC System Description of Area Served	Indoor Unit Name or Description of Area Served	Installed Indoor Unit Type	Outdoor Condenser or Package Unit - Installed Manufacturer Name	Outdoor Condenser or Package Unit - Installed Model Number	Indoor Unit - Installed Manufacturer Name	Indoor Unit - Installed Model Number	Installed Furnace Manufacturer Name	Installed Furnace Model Number
HVAC System1	1	1	HP Coil	GREE	MULTI42HP 230V1E0	GREE	4LIV09HP23 0V1AH	n/a	n/a

D. Verified Cooling System SEER/SEER2

This section does not apply to this project.

E. Verified Cooling System EER/EER2

This section does not apply to this project.

F. Verified Heat Pump Heating Output		
01	Required Heating BTU Output at 47 Degrees F	60000
02	Installed Heating BTU Output at 47 Degrees F	60000
03	Required Heating Output at 17 Degrees F	54500
04	Installed Heating Output at 17 Degrees F	54500
05	Compliance Statement:	System Passes Heat Pump Heating Output Performance Compliance Verification

G. Verified Heat Pump HSPF/HSPF2
This section does not apply to this project.

H. Verified Space Conditioning System Air Handler, Furnace Or Fan Coil
This section does not apply to this project.

I. Verified Space Conditioning System Time Delay Relay	
01	If a Time Delay Relay is specified by the Directory of Certified Product Performance, the responsible person certifies by signing this compliance document that the Time Delay Relay is installed and has been tested to operate correctly according to the protocols of RA3.4.3.

J. Verified Space Conditioning System TXV	
01	If a TXV is specified by the Directory of Certified Product Performance, the responsible person certifies by signing this compliance document that the TXV is properly installed and has been visually verified, including proper placement of the sensing bulb.

RATED SPACE CONDITIONING SYSTEM EQUIPMENT VERIFICATION

CF2R-MCH-26-H

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Installation documentation is accurate and complete.	
Documentation Author Name: Scott Sowle	Documentation Author Signature: Scott Sowle
Company: Homeowner - Scott Sowle	Signature Date: 2024-04-11
Address: 1030 Thompson Ln	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Petaluma CA 94952	Phone: 000-000-0000

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this certificate of installation is true and correct.
2. I am either: a) a responsible person eligible under division 3 of the business and professions code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this certificate of installation, and attest to the declarations in this statement, or b) i am an authorized representative of the responsible person and attest to the declarations in this statement on the responsible person's behalf.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this certificate of installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the certificate of compliance, plans, and specifications approved by the enforcement agency.
4. I understand that a HERS rater will check the installation to verify compliance and if such checking determines the installation fails to comply, I am required to offer any necessary corrective action at no charge to the building owner.
5. I understand that a registered copy of this certificate of installation shall be posted or made available with the building permit(s) issued for the building and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to ensure this requirement is accomplished.
6. I understand that a registered copy of this certificate of installation is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to ensure this requirement is accomplished.

Responsible Builder/Installer Name: Scott Sowle	Responsible Builder/Installer Signature: Scott Sowle	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner) Homeowner - Scott Sowle	Position With Company (Title):	
Address: 1030 Thompson Ln	CSLB License:	
City/State/Zip: Petaluma CA 94952	Phone: 000-000-0000	Date Signed: 2024-04-11
Third Party Quality Control Program (TPQCP) Status:	Name of TPQCP (if applicable):	

CERTIFICATE OF INSTALLATION

Project Name:	MuirWoodLLCAdditionRevB	**Enforcement Agency:**	Petaluma, City of
Dwelling Address:	1030 Thompson Lane	**Permit Number:**	BLD23-6746
City and Zip Code	Petaluma, 94952	**Permit Application Date:**	2024-01-01

A. System Information

Procedures for verification of High SEER/SEER2 and EER/EER2 Equipment are described in Reference Appendix RA3.4. Each HVAC system requiring verification must use a separate form.

01	Space Conditioning System Identification or Name	HVAC System1
02	Space Conditioning System Description of Area Served	main 2
03	Efficiency Metric	HSPF
04	Status: SEER/SEER2 Performance Compliance Credit Check	No
05	Status: EER/EER2 Performance Compliance Credit Check	No
06	Status: Heat Pump Heating Output Performance Compliance Check	Yes
07	Status: HSPF/HSPF2 Performance Compliance Credit Check	No
08	Directory used to certify product performance	AHRI
09	AHRI certification number for the installed space conditioning system from http://www.ahridirectory.org	210278977
10	Does the directory used to certify product performance require a specific air handler, furnace or fan coil make and model?	No
11	Does the directory used to certify product performance require a time delay relay (+TDR)?	Yes
12	Does the directory used to certify product performance require a TXV (+TXV)?	Yes

B. Rated Space Conditioning System Equipment Information from Nameplate of the Installed System

The data on the nameplate of the installed component shall conform to the data for the component as shown in the Directory used to certify product performance in order to demonstrate compliance.

01	02	03	04	Data from nameplate of installed system component					
				05	06	07	08	09	10
SC System ID/Name	SC System Description of Area Served	Indoor Unit Name or Description of Area Served	Installed Indoor Unit Type	Outdoor Condenser or Package Unit - Installed Manufacturer Name	Outdoor Condenser or Package Unit - Installed Model Number	Indoor Unit - Installed Manufacturer Name	Indoor Unit - Installed Model Number	Installed Furnace Manufacturer Name	Installed Furnace Model Number
HVAC System1	main 2	main 2	HP Coil	Gree	MULTI30HP 230V1E0	Gree	4LIV09HP23 0V1AH	n/a	n/a

C. Rated Space Conditioning System Equipment Information from Directory of Certified Product Performance

The data on the nameplate of the installed component shall conform to the data for the component as shown in the Directory used to certify product performance in order to demonstrate compliance.

01	02	03	04	Data from the Directory used to certify product performance for the rated system component					
				05	06	07	08	09	10
SC System ID/Name	SC System Description of Area Served	Indoor Unit Name or Description of Area Served	Installed Indoor Unit Type	Outdoor Condenser or Package Unit - Installed Manufacturer Name	Outdoor Condenser or Package Unit - Installed Model Number	Indoor Unit - Installed Manufacturer Name	Indoor Unit - Installed Model Number	Installed Furnace Manufacturer Name	Installed Furnace Model Number
HVAC System1	main 2	main 2	HP Coil	GREE	MULTI30HP 230V1E0	GREE	4LIV09HP23 0V1AH	n/a	n/a

D. Verified Cooling System SEER/SEER2

This section does not apply to this project.

E. Verified Cooling System EER/EER2

This section does not apply to this project.

F. Verified Heat Pump Heating Output		
01	Required Heating BTU Output at 47 Degrees F	60000
02	Installed Heating BTU Output at 47 Degrees F	60000
03	Required Heating Output at 17 Degrees F	54500
04	Installed Heating Output at 17 Degrees F	54500
05	Compliance Statement:	System Passes Heat Pump Heating Output Performance Compliance Verification

G. Verified Heat Pump HSPF/HSPF2
This section does not apply to this project.

H. Verified Space Conditioning System Air Handler, Furnace Or Fan Coil
This section does not apply to this project.

I. Verified Space Conditioning System Time Delay Relay	
01	If a Time Delay Relay is specified by the Directory of Certified Product Performance, the responsible person certifies by signing this compliance document that the Time Delay Relay is installed and has been tested to operate correctly according to the protocols of RA3.4.3.

J. Verified Space Conditioning System TXV	
01	If a TXV is specified by the Directory of Certified Product Performance, the responsible person certifies by signing this compliance document that the TXV is properly installed and has been visually verified, including proper placement of the sensing bulb.

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Installation documentation is accurate and complete.	
Documentation Author Name: Scott Sowle	Documentation Author Signature: Scott Sowle
Company: Homeowner - Scott Sowle	Signature Date: 2024-04-11
Address: 1030 Thompson Ln	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Petaluma CA 94952	Phone: 000-000-0000

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this certificate of installation is true and correct.
2. I am either: a) a responsible person eligible under division 3 of the business and professions code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this certificate of installation, and attest to the declarations in this statement, or b) i am an authorized representative of the responsible person and attest to the declarations in this statement on the responsible person's behalf.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this certificate of installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the certificate of compliance, plans, and specifications approved by the enforcement agency.
4. I understand that a HERS rater will check the installation to verify compliance and if such checking determines the installation fails to comply, I am required to offer any necessary corrective action at no charge to the building owner.
5. I understand that a registered copy of this certificate of installation shall be posted or made available with the building permit(s) issued for the building and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to ensure this requirement is accomplished.
6. I understand that a registered copy of this certificate of installation is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to ensure this requirement is accomplished.

Responsible Builder/Installer Name: Scott Sowle	Responsible Builder/Installer Signature: Scott Sowle	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner) Homeowner - Scott Sowle	Position With Company (Title):	
Address: 1030 Thompson Ln	CSLB License:	
City/State/Zip: Petaluma CA 94952	Phone: 000-000-0000	Date Signed: 2024-04-11
Third Party Quality Control Program (TPQCP) Status:	Name of TPQCP (if applicable):	

CERTIFICATE OF INSTALLATION

Project Name:	MuirWoodLLCAdditionRevB	**Enforcement Agency:**	Petaluma, City of
Dwelling Address:	1030 Thompson Lane	**Permit Number:**	BLD23-6746
City and Zip Code	Petaluma, 94952	**Permit Application Date:**	2024-01-01

A2. Design Dwelling Unit HPWH System Information

This table reports features of HPWH water heating system(s) that were specified on the registered CF1R compliance document for this project.

01	02	03	04	05	06	07	08
Dwelling Unit Name	Water Heating System ID or Name	Modeled Equipment Make and Model	# of Like (or Identical) Water Heaters in System	Tank Location	Exterior Tank Insulation R-Value	Dwelling Unit DHW System Distribution Type	Compact Distribution
Single Family Dwelling	DHW Sys 1	RheemPROPH40T2RH375 15	1	Outside	N/A	StandardDistribution	NotCompact

B2. Installed Dwelling Unit HPWH System Information

This table reports the water heating systems(s) installed in this project.

01	02	03	04	05	06	07	08	09
Dwelling Unit Name	Water Heating System ID or Name	Make and Model	# of Like (or Identical) Water Heaters in System	Tank Location	Exterior Tank Insulation R-Value	Tank Volume	Dwelling Unit DHW System Distribution Type	Compact Distribution
Single Family Dwelling	DHW Sys 1	RheemPROPH40T2RH3 7515	1	Outside		Standard Distribution System	None	

C. Design Dwelling Unit Water Heating Efficiency Information

This table reports the water heater(s) efficiency features specified on the registered CF1R compliance document for this project.

01	02	03	04	05	06	07
Water Heating System ID or Name	Heating Efficiency Type	Heating Efficiency Value	Standby Loss (%)	Exterior Insul. R-Value	Water Heater Storage Volume (gal)	Tank Location
DHW Sys 1					40.00	Outside

D. Installed Dwelling Unit Water Heating Efficiency Information

This table reports the water heating system features that were installed in this project.

01	02	03	04	05	06	07
Water Heating System ID or Name	Heating Efficiency Type	Heating Efficiency Value	Standby Loss (%)	Exterior Insul. R-Value	Water Heater Storage Volume (gal)	Tank Location
DHW Sys 1					40	Outside

E. Installed Water Heater Manufacturer Information

01	02	03
Water Heating System ID or Name	Manufacturer	Model Number
DHW Sys 1	rheem	A0-34522

F. Mandatory Measures for all Domestic Hot Water Distribution Systems

01	Equipment shall meet the applicable requirements of the Appliance Efficiency Regulations (Section 110.3(b)1).
02	Unfired storage tanks are insulated with an external R-3.5 or combination of R-16 internal and external Insulation. (Section 110.3(c)4).
03	All domestic hot water pipes shall be insulated as specified in Section 609.11 of the California Plumbing Code. • Insulation buried below grade must be installed in a waterproof and non-crushable casing or sleeve. • Piping that penetrates framing members shall not be required to have pipe insulation for the distance of the framing penetration. • Piping that penetrates metal framing shall use grommets, plugs, wrapping or other insulating material to assure that no contact is made with the metal framing. Insulation shall butt securely against all framing members. • Piping installed in interior or exterior walls that is surrounded on all sides by at least 1 inch (2.5 cm) of insulation. • Piping installed in crawl space with a minimum of 1 inch (2.5 cm) of crawl space insulation above and below. • Piping installed in attics with a minimum of 4 inches (10 cm) of attic insulation on top • Piping insulation shall fit tightly, and all elbows and tees shall be fully insulated.

F. Mandatory Measures for all Domestic Hot Water Distribution Systems	
04	For Gas or Propane Water Heaters: Ensure either a or b are installed (Section 150.0(n)) a) A designated space at least 2.5 feet by 2.5 feet and 7 feet tall within 3 feet from the water heater 1. A dedicated 120V, 20A electrical receptacle connected to the electrical panel with a 120/240V 3 conductor, 10AWG copper branch circuit, within 3 feet from the water heater and accessible with no obstructions 2. The conductor shall be labeled with the word "Spare" on both ends; and 3. A reserved single pole circuit breaker space next to the circuit breaker next to the branch circuit labeled "Future" 240V shall be provided. 4. A condensate drain no more than 2 inches higher than the base on water heater for natural draining b) A designated space at least 2.5 feet by 2.5 feet and 7 feet tall within 3 feet from the water heater 1. A dedicated 240 volt branch circuit shall be installed within 3 feet from the designated space. The branch circuit shall be rated at 30 amps minimum. The blank cover shall be identified as "240V ready"; and 2. The main electrical service panel shall have a reserved space to allow for the installation of a double pole circuit breaker for a future HPWH installation. The reserved space shall be permanently marked as "For Future 240V use"; and 3. Either a dedicated cold water supply, or the cold water supply shall pass through the designated HPWH location just before reaching the gas or propane water heater; and 4. The hot water supply pipe coming out of the gas or propane water heater shall be routed first through the designated HPWH location before serving any fixtures; and 5. The hot and cold water piping at the designated HPWH location shall be exposed and readily accessible for future installation of a HPWH; and 6. A condensate drain no more than 2 inches higher than the base of the installed water heater, and allows natural draining without pump assistance.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT		
1. I certify that this Certificate of Installation documentation is accurate and complete.		
Documentation Author Name: Scott Sowle	Documentation Author Signature: Scott Sowle	
Company: Homeowner - Scott Sowle	Signature Date: 2024-04-11	
Address: 1030 Thompson Ln	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip: Petaluma CA 94952	Phone: 000-000-0000	

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Installation is true and correct.
2. II am either: a) a responsible person eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation, and attest to the declarations in this statement, or b) I am an authorized representative of the responsible person and attest to the declarations in this statement on the responsible person's behalf.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I understand that a registered copy of this Certificate of Installation shall be posted or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to ensure this requirement is accomplished.
5. I understand that a registered copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to ensure this requirement is accomplished.

Responsible Builder/Installer Name: Scott Sowle	Responsible Builder/Installer Signature: Scott Sowle	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner) Homeowner - Scott Sowle	Position With Company (Title):	
Address: 1030 Thompson Ln	CSLB License:	
City/State/Zip: Petaluma CA 94952	Phone: 000-000-0000	Date Signed: 2024-04-11

CERTIFICATE OF VERIFICATION

Project Name:	MuirWoodLLCAdditionRevB	**Enforcement Agency:**	Petaluma, City of
Dwelling Address:	1030 Thompson Lane	**Permit Number:**	BLD23-6746
City and Zip Code	Petaluma, 94952	**Permit Application Date:**	2024-01-01

A. System Information

Procedures for verification of High SEER/SEER2 and EER/EER2 Equipment are described in Reference Appendix RA3.4. Each HVAC system requiring verification must use a separate form.

01	Space Conditioning System Identification or Name	HVAC System1
02	Space Conditioning System Description of Area Served	1
03	Efficiency Metric	HSPF
04	Status: SEER/SEER2 Performance Compliance Credit Check	No
05	Status: EER/EER2 Performance Compliance Credit Check	No
06	Status: Heat Pump Heating Output Performance Compliance Check	Yes
07	Status: HSPF/HSPF2 Performance Compliance Credit Check	No
08	Directory used to certify product performance	AHRI
09	AHRI certification number for the installed space conditioning system from http://www.ahridirectory.org	9956595
10	Does the directory used to certify product performance require a specific air handler/furnace make and model?	No
11	Does the directory used to certify product performance require a time delay relay (+TDR)?	Yes
12	Does the directory used to certify product performance require a TXV (+TXV)?	Yes

B. Rated Space Conditioning System Equipment Information from Nameplate of the Installed System

The data on nameplate of the installed component shall conform to the data for the component as shown in the Directory used to certify product performance in order to demonstrate compliance.

01	02	03	04	Data from Nameplate of Installed System Component					
				05	06	07	08	09	10
SC System ID/Name from CF1R	SC System Description of Area Served	Indoor Unit Name or Description of Area Served	Installed Indoor Unit Type	Outdoor Condenser or Package Unit - Installed Manufacturer Name	Outdoor Condenser or Package Unit - Installed Model Number	Indoor Unit - Installed Manufacturer Name	Indoor Unit - Installed Model Number	Installed Furnace Manufacturer Name	Installed Furnace Model Number
HVAC System1	1	1	HP Coil	Gree	MULTI42HP230V1E0	GREE	4LIV09HP230V1AH	n/a	n/a

C. Rated Space Conditioning System Equipment Information from Directory of Certified Product Performance

The data on the nameplate of the installed component shall conform to the data for the component as shown in the Directory used to certify product performance in order to demonstrate compliance.

01	02	03	04	Data from the Directory used to certify product performance for the rated system component					
				05	06	07	08	09	10
SC System ID/Name on CF1R	SC System Description of Area Served	Indoor Unit Name or Description of Area Served	Installed Indoor Unit Type	Outdoor Condenser or Package Unit - Installed Manufacturer Name	Outdoor Condenser or Package Unit - Installed Model Number	Indoor Unit - Installed Manufacturer Name	Indoor Unit - Installed Model Number	Installed Furnace Manufacturer Name	Installed Furnace Model Number
HVAC System1	1	1	HP Coil	GREE	MULTI42HP230V1E0	GREE	4LIV09HP230V1AH	n/a	n/a

D. Verified Cooling System SEER/SEER2

This section does not apply to this project.

E. Verified Cooling System EER/EER2

This section does not apply to this project.

F. Verified Heat Pump Heating Output		
01	Required Heating BTU Output at 47 Degrees F	60000
02	Installed Heating BTU Output at 47 Degrees F	60000
03	Required Heating BTU Output at 17 Degrees F	54500
04	Installed Heating BTU Output at 17 Degrees F	54500
05	Compliance Statement:	System Passes Heat Pump Heating Output Performance Compliance Verification
Signature by responsible person on this compliance document certifies that the installed heat pump equipment meets or exceeds the required value listed on the parent MCH-26 Certificate of Installation.		

G. Verified Heat Pump HSPF/HSPF2
This section does not apply to this project.

H. Verified Space Conditioning System Air Handler, Furnace or Fan Coil
This section does not apply to this project.

I. Verified Space Conditioning System Time Delay Relay		
01	If a Time Delay Relay is specified by the Directory of Certified Product Performance, the responsible person certifies by signing this compliance document that the Time Delay Relay is installed and has been tested to operate correctly according to the protocols of RA3.4.3.	
02	Verification Status:	Pass - all applicable requirements are met.
03	Correction Notes:	
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met unless otherwise noted in the Verification Status and the Corrections Notes in this table.		

J. Verified Space Conditioning System TXV		
01	If a TXV is specified by the Directory of Certified Product Performance, the responsible person certifies by signing this compliance document that the TXV is properly installed and has been visually verified, including proper placement of the sensing bulb.	
02	Verification Status:	Pass - all applicable requirements are met.
03	Correction Notes:	
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met unless otherwise noted in the Verification Status and the Corrections Notes in this table.		

K. Determination of HERS Verification Compliance All applicable sections of this document shall indicate compliance with the specified verification protocol requirements in order for this Certificate of Verification as a whole to be determined to be in compliance.	
01	Complies: All specified verification protocol requirements on this document are met.

RATED SPACE CONDITIONING SYSTEM EQUIPMENT VERIFICATION

CF3R-MCH-26-H

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Verification documentation is accurate and complete.	
Documentation Author Name: Guillermo Hernandez jr	Documentation Author Signature:
Company: Quality Duct Testing	Date Signed: 2024-04-11
Address: 6749 NAVION DR	CEA/ HERS Certification Identification (if applicable): RCN13585
City/State/Zip: CITRUS HEIGHTS CA 95621	Phone: 9168937283

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Verification is true and correct.
2. I am the certified HERS Rater who performed the verification identified and reported on this Certificate of Verification (responsible rater).
3. The installed features, materials, components, manufactured devices, or system performance diagnostic results that require HERS verification identified on this Certificate of Verification comply with the applicable requirements in Reference Appendices RA2, RA3, and the requirements specified on the Certificate of Compliance for the building approved by the enforcement agency.
4. The information reported on applicable sections of the Certificate(s) of Installation (CF2R) signed and submitted by the person(s) responsible for the construction or installation conforms to the requirements specified on the Certificate(s) of Compliance (CF1R) approved by the enforcement agency.
5. I understand that a registered copy of this Certificate of Verification shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to ensure this requirement is accomplished.
6. I understand that a registered copy of this Certificate of Verification is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to ensure this requirement is accomplished.

BUILDER OR INSTALLER INFORMATION AS SHOWN ON THE CERTIFICATE OF INSTALLATION	
Company Name (Installing Subcontractor, General Contractor, or Builder/Owner): Homeowner - Scott Sowle	
Responsible Builder or Installer Name: Scott Sowle	CSLB License:
HERS PROVIDER DATA REGISTRY INFORMATION	
Sample Group Number (if applicable):	Dwelling Test Status in Sample Group (if applicable) N/A
HERS RATER INFORMATION	
HERS Rater Company Name: Quality Duct Testing	
Responsible Rater Name: Guillermo Hernandez jr	Responsible Rater Signature:
Responsible Rater Certification Number w/ this HERS Provider: RCN13585	Date Signed: 2024-04-11

CERTIFICATE OF VERIFICATION

Project Name:	MuirWoodLLCAdditionRevB	**Enforcement Agency:**	Petaluma, City of
Dwelling Address:	1030 Thompson Lane	**Permit Number:**	BLD23-6746
City and Zip Code	Petaluma, 94952	**Permit Application Date:**	2024-01-01

A. System Information

Procedures for verification of High SEER/SEER2 and EER/EER2 Equipment are described in Reference Appendix RA3.4. Each HVAC system requiring verification must use a separate form.

01	Space Conditioning System Identification or Name	HVAC System1
02	Space Conditioning System Description of Area Served	main 2
03	Efficiency Metric	HSPF
04	Status: SEER/SEER2 Performance Compliance Credit Check	No
05	Status: EER/EER2 Performance Compliance Credit Check	No
06	Status: Heat Pump Heating Output Performance Compliance Check	Yes
07	Status: HSPF/HSPF2 Performance Compliance Credit Check	No
08	Directory used to certify product performance	AHRI
09	AHRI certification number for the installed space conditioning system from http://www.ahridirectory.org	210278977
10	Does the directory used to certify product performance require a specific air handler/furnace make and model?	No
11	Does the directory used to certify product performance require a time delay relay (+TDR)?	Yes
12	Does the directory used to certify product performance require a TXV (+TXV)?	Yes

B. Rated Space Conditioning System Equipment Information from Nameplate of the Installed System

The data on nameplate of the installed component shall conform to the data for the component as shown in the Directory used to certify product performance in order to demonstrate compliance.

01	02	03	04	Data from Nameplate of Installed System Component					
				05	06	07	08	09	10
SC System ID/Name from CF1R	SC System Description of Area Served	Indoor Unit Name or Description of Area Served	Installed Indoor Unit Type	Outdoor Condenser or Package Unit - Installed Manufacturer Name	Outdoor Condenser or Package Unit - Installed Model Number	Indoor Unit - Installed Manufacturer Name	Indoor Unit - Installed Model Number	Installed Furnace Manufacturer Name	Installed Furnace Model Number
HVAC System1	main 2	main 2	HP Coil	Gree	MULTI30HP 230V1E0	Gree	4LIV09HP23 0V1AH	n/a	n/a

C. Rated Space Conditioning System Equipment Information from Directory of Certified Product Performance

The data on the nameplate of the installed component shall conform to the data for the component as shown in the Directory used to certify product performance in order to demonstrate compliance.

01	02	03	04	Data from the Directory used to certify product performance for the rated system component					
				05	06	07	08	09	10
SC System ID/Name on CF1R	SC System Description of Area Served	Indoor Unit Name or Description of Area Served	Installed Indoor Unit Type	Outdoor Condenser or Package Unit - Installed Manufacturer Name	Outdoor Condenser or Package Unit - Installed Model Number	Indoor Unit - Installed Manufacturer Name	Indoor Unit - Installed Model Number	Installed Furnace Manufacturer Name	Installed Furnace Model Number
HVAC System1	main 2	main 2	HP Coil	GREE	MULTI30HP 230V1E0	GREE	4LIV09HP23 0V1AH	n/a	n/a

D. Verified Cooling System SEER/SEER2

This section does not apply to this project.

E. Verified Cooling System EER/EER2

This section does not apply to this project.

F. Verified Heat Pump Heating Output		
01	Required Heating BTU Output at 47 Degrees F	60000
02	Installed Heating BTU Output at 47 Degrees F	60000
03	Required Heating BTU Output at 17 Degrees F	54500
04	Installed Heating BTU Output at 17 Degrees F	54500
05	Compliance Statement:	System Passes Heat Pump Heating Output Performance Compliance Verification
Signature by responsible person on this compliance document certifies that the installed heat pump equipment meets or exceeds the required value listed on the parent MCH-26 Certificate of Installation.		

G. Verified Heat Pump HSPF/HSPF2
This section does not apply to this project.

H. Verified Space Conditioning System Air Handler, Furnace or Fan Coil
This section does not apply to this project.

I. Verified Space Conditioning System Time Delay Relay		
01	If a Time Delay Relay is specified by the Directory of Certified Product Performance, the responsible person certifies by signing this compliance document that the Time Delay Relay is installed and has been tested to operate correctly according to the protocols of RA3.4.3.	
02	Verification Status:	Pass - all applicable requirements are met.
03	Correction Notes:	
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met unless otherwise noted in the Verification Status and the Corrections Notes in this table.		

J. Verified Space Conditioning System TXV		
01	If a TXV is specified by the Directory of Certified Product Performance, the responsible person certifies by signing this compliance document that the TXV is properly installed and has been visually verified, including proper placement of the sensing bulb.	
02	Verification Status:	Pass - all applicable requirements are met.
03	Correction Notes:	
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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Verification documentation is accurate and complete.	
Documentation Author Name: Guillermo Hernandez jr	Documentation Author Signature:
Company: Quality Duct Testing	Date Signed: 2024-04-11
Address: 6749 NAVION DR	CEA/ HERS Certification Identification (if applicable): RCN13585
City/State/Zip: CITRUS HEIGHTS CA 95621	Phone: 9168937283

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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2. I am the certified HERS Rater who performed the verification identified and reported on this Certificate of Verification (responsible rater).
3. The installed features, materials, components, manufactured devices, or system performance diagnostic results that require HERS verification identified on this Certificate of Verification comply with the applicable requirements in Reference Appendices RA2, RA3, and the requirements specified on the Certificate of Compliance for the building approved by the enforcement agency.
4. The information reported on applicable sections of the Certificate(s) of Installation (CF2R) signed and submitted by the person(s) responsible for the construction or installation conforms to the requirements specified on the Certificate(s) of Compliance (CF1R) approved by the enforcement agency.
5. I understand that a registered copy of this Certificate of Verification shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to ensure this requirement is accomplished.
6. I understand that a registered copy of this Certificate of Verification is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to ensure this requirement is accomplished.

BUILDER OR INSTALLER INFORMATION AS SHOWN ON THE CERTIFICATE OF INSTALLATION	
Company Name (Installing Subcontractor, General Contractor, or Builder/Owner): Homeowner - Scott Sowle	
Responsible Builder or Installer Name: Scott Sowle	CSLB License:

HERS PROVIDER DATA REGISTRY INFORMATION	
Sample Group Number (if applicable):	Dwelling Test Status in Sample Group (if applicable) N/A

HERS RATER INFORMATION	
HERS Rater Company Name: Quality Duct Testing	
Responsible Rater Name: Guillermo Hernandez jr	Responsible Rater Signature:
Responsible Rater Certification Number w/ this HERS Provider: RCN13585	Date Signed: 2024-04-11

CHEERS REGISTRY
PROJECT STATUS REPORT

Scan to Validate

PROJECT SUMMARY

Project Name:	MuirWoodLLCAdditionRevB
Address:	1030 Thompson Lane
City, State, Zip:	Petaluma, CA 94952
Building Department:	Petaluma, City of
Permit Number:	BLD23-6746
Building Energy Code:	2022 Standards

HERS VERIFIABLE MEASURES COMPLETE

ENERGY CODE COMPLIANCE COMPLETE

CERTIFICATE OF COMPLIANCE (CF1R)

DATE	DOCUMENT	TITLE	REGISTRATION NUMBER	STATUS
04/03/2024	CF1R-PRF-01-E	Performance Compliance	424-P010057935A-000-000-0000000-0000	

CERTIFICATE OF INSTALLATION (CF2R)

DATE	DOCUMENT	TITLE	REGISTRATION NUMBER	STATUS
04/11/2024	CF2R-ENV-01-E	Fenestration	424-P010057935A-000-001-E01002A-0000	
04/11/2024	CF2R-ENV-03-E	Insulation Installation	424-P010057935A-000-001-E03003A-0000	
04/11/2024	CF2R-LTG-01-E	Lighting	424-P010057935A-000-001-L01004A-0000	
04/11/2024	CF2R-MCH-01d-E	HVAC, Ducts and Fans	424-P010057935A-000-001-M01001A-0000	
04/11/2024	CF2R-PLB-02-E	Single Family Hot Water	424-P010057935A-000-001-B02005A-0000	
HVAC System1				
04/11/2024	CF2R-MCH-26-H	High SEER & EER	424-P010057935A-000-001-M26006A-0000	
04/11/2024	CF2R-MCH-26-H	High SEER & EER	424-P010057935A-000-001-M26007A-0000	

CERTIFICATE OF VERIFICATION (CF3R)

DATE	DOCUMENT	TITLE	REGISTRATION NUMBER	STATUS
HVAC System1				
04/11/2024	CF3R-MCH-26-H	High SEER & EER	424-P010057935A-000-001-M26006A-M26A	

- continued on next page -

CHEERS REGISTRY
PROJECT STATUS REPORT

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CERTIFICATE OF VERIFICATION (CF3R)

DATE	DOCUMENT	TITLE	REGISTRATION NUMBER	STATUS
04/11/2024	CF3R-MCH-26-H	High SEER & EER	424-P010057935A-000-001-M26007A-M26A	