

CERTIFICATE OF COMPLIANCE

CF1R-PRF-01E

Project Name: Arvin Babu A Frame Building

Calculation Date/Time: 2022-05-31T15:28:42-07:00

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Calculation Description: Title 24 Analysis

Input File Name: 053122 Arvin Babu A Frame Building.ribd19x

GENERAL INFORMATION					
01	Project Name	Arvin Babu A Frame Building			
02	Run Title	Title 24 Analysis			
03	Project Location	2200 Diamond Mountain Road			
04	City	Calistoga	05	Standards Version	2019
06	Zip code	94515	07	Software Version	EnergyPro 8.3
08	Climate Zone	2	09	Front Orientation (deg/ Cardinal)	236
10	Building Type	Single family	11	Number of Dwelling Units	1
12	Project Scope	NewConstruction	13	Number of Bedrooms	1
14	Addition Cond. Floor Area (ft ²)	0	15	Number of Stories	1
16	Existing Cond. Floor Area (ft ²)	n/a	17	Fenestration Average U-factor	0.28
18	Total Cond. Floor Area (ft ²)	833	19	Glazing Percentage (%)	46.70%
20	ADU Bedroom Count	n/a	21	ADU Conditioned Floor Area	n/a
22	Is Natural Gas Available?	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

THESE ATTACHMENTS ARE PART OF THE APPROVED PLANS. * DO NOT REMOVE THEM *

01/18/2023

PERMIT AND RESOURCE MANAGEMENT DEPARTMENT BUILDING PLAN CHECK

PERMIT # Bld22-3564

Registration Number:

222-P010107688C-000-000-0000000-0000

Registration Date/Time:

2022-05-31 15:31:20

HERS Provider:

CalCERTS inc.

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Report Version: 2019.2.000

Schema Version: rev 20200901

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ENERGY DESIGN RATING				
	Energy Design Ratings		Compliance Margins	
	Efficiency ¹ (EDR)	Total ² (EDR)	Efficiency ¹ (EDR)	Total ² (EDR)
Standard Design	59.7	34.8		
Proposed Design	58.3	33.5	1.4	1.3
RESULT: ³: COMPLIES				
1: Efficiency EDR includes improvements to the building envelope and more efficient equipment				
2: Total EDR includes efficiency and demand response measures such as photovoltaic (PV) systems and batteries				
3: Building complies when efficiency and total compliance margins are greater than or equal to zero				
<ul style="list-style-type: none"> Standard Design PV Capacity: 1.67 kWdc PV System resized to 1.67 kWdc (a factor of 1.666) to achieve 'Standard Design PV' PV scaling 				

ENERGY USE SUMMARY				
Energy Use (kTDV/ft ² -yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	30.3	26.85	3.45	11.4
Space Cooling	0.65	8.93	-8.28	-1273.8
IAQ Ventilation	4.01	4.01	0	0
Water Heating	25.53	16.37	9.16	35.9
Self Utilization/Flexibility Credit	n/a	0	0	n/a
Compliance Energy Total	60.49	56.16	4.33	7.2

REQUIRED PV SYSTEMS - SIMPLIFIED											
01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	Exception	Module Type	Array Type	Power Electronics	CFI	Azimuth (deg)	Tilt Input	Array Angle (deg)	Tilt: (x in 12)	Inverter Eff. (%)	Annual Solar Access (%)
1.67	NA	Standard	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

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REQUIRED SPECIAL FEATURES

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

- Window overhangs and/or fins
- Structurally insulated panel (SIP) assembly
- Solar water heating credit, single family building
- Compact distribution system basic credit

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

Building-level Verifications:

- Quality insulation installation (QII)
- Building air leakage/reduced infiltration
- Indoor air quality ventilation
- Kitchen range hood

Cooling System Verifications:

- Verified Refrigerant Charge

Heating System Verifications:

- Verified heat pump rated heating capacity

HVAC Distribution System Verifications:

- -- None --

Domestic Hot Water System Verifications:

- -- None --

**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
Arvin Babu A Frame Building	833	1	1	1	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	Water Heating System 2
New A Frame	Conditioned	Mini Split1	833	8	DHW Sys 1	N/A

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OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft ²)	Window and Door Area (ft ²)	Tilt (deg)
Front	New A Frame	R21 Wall	236	Front	181	94.905	90
Left	New A Frame	R21 Wall	326	Left	106	105.9	90
Back	New A Frame	R21 Wall	56	Back	181	79.5168	90
Right	New A Frame	R21 Wall	146	Right	108.8	108.7	90
Loft Floor	New A Frame	Interior Floor	n/a	n/a	150	n/a	n/a

OPAQUE SURFACES - CATHEDRAL CEILINGS										
01	02	03	04	05	06	07	08	09	10	11
Name	Zone	Construction	Azimuth	Orientation	Area (ft ²)	Skylight Area (ft ²)	Roof Rise (x in 12)	Roof Reflectance	Roof Emittance	Cool Roof
Roof	New A Frame	SIP Roof	146	Right	833	0	20	0.1	0.85	No

FENESTRATION / GLAZING													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Type	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft ²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Fenestration	Window	Front	Front	236	10	9.5	0	94.91	0.28	NFRC	0.21	NFRC	Bug Screen
Fenestration 2	Window	Left	Left	326			1	105.9	0.28	NFRC	0.21	NFRC	Bug Screen
Fenestration 3	Window	Back	Back	56	8	9.9	1	79.52	0.28	NFRC	0.21	NFRC	Bug Screen
Fenestration 4	Window	Right	Right	146			1	108.7	0.28	NFRC	0.21	NFRC	Bug Screen

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OVERHANGS AND FINNS													
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Window	Overhang					Left Fin				Right Fin			
	Depth	Dist Up	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	Dist L	Bot Up	Depth	Top Up	Dist R	Bot Up
Fenestration	2	2	2	2	0	0	0	0	0	0	0	0	0
Fenestration 3	2	2	2	2	0	0	0	0	0	0	0	0	0

SLAB FLOORS							
01	02	03	04	05	06	07	08
Name	Zone	Area (ft ²)	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Floor	New A Frame	733	116	none	0	80%	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
R21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / R-0.6	0.062	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Sheathing / Insulation: R-0.6 Sheathing Exterior Finish: Wood Siding/sheathing/decking
SIP Roof	Cathedral Ceilings	SIPS Ceiling	2x4 Other	R-36	None / None	0.026	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-36 / 2x4 Inside Finish: Gypsum Board

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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
Interior Floor	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
Quality Insulation Installation (QII)	High R-value Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Required	Not Required	Required	222.1

WATER HEATING SYSTEMS						
01	02	03	04	05	06	07
Name	System Type	Distribution Type	Water Heater Name (#)	Solar Heating System	Compact Distribution	HERS Verification
DHW Sys 1	Domestic Hot Water (DHW)	Standard Distribution System	DHW Heater 1 (1)	Solar-DHW	Basic	n/a

WATER HEATERS											
01	02	03	04	05	06	07	08	09	10	11	12
Name	Heating Element Type	Tank Type	# of Units	Tank Vol. (gal)	Energy Factor or Efficiency	Input Rating or Pilot	Tank Insulation R-value (Int/Ext)	Standby Loss or Recovery Eff	1st Hr. Rating or Flow Rate	NEEA Heat Pump Brand or Model	Tank Location or Ambient Condition
DHW Heater 1	Electric Resistance	Consumer Instantaneous	1	1	0.98-UEF	<= 12 kW	0	99	n/a	n/a	n/a

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SOLAR WATER HEATING SYSTEMS									
01	02	03	04	05	06	07	08	09	10
Name	Collector Manufacturer	Collector Brand	Collector Model	Number of Collectors	Azimuth from North	Tilt from Horizontal	Tank Volume (gal)	SRCC/IAPMO Number	Solar Savings Fraction
Solar-DHW	(OG-300 rated system)	n/a	Solar Savings Fraction	n/a	n/a	n/a	n/a	n/a	0.75

WATER HEATING - COMPACT DISTRIBUTION						
01	02	03	04	05	06	07
Dwelling Unit type	Water Heating System Name	Master Bath distance of furthest fixture to Water Heater (ft)	Kitchen distance of furthest fixture to Water Heater (ft)	Furthest Third furthest fixture to Water Heater (ft)	Compactness Factor	HERS Verification
Dwelling	DHW Sys 1	n/a	n/a	n/a	0.7	n/a

WATER HEATING - HERS VERIFICATION							
01	02	03	04	05	06	07	08
Name	Pipe Insulation	Parallel Piping	Compact Distribution	Compact Distribution Type	Recirculation Control	Central DHW Distribution	Shower Drain Water Heat Recovery
DHW Sys 1 - 1/1	Not Required	Not Required	Not Required	Basic	Not Required	Not Required	Not Required

SPACE CONDITIONING SYSTEMS										
01	02	03	04	05	06	07	08	09	10	11
Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name	Required Thermostat Type	Status	Verified Existing Condition	Heating Equipment Count	Cooling Equipment Count
Mini Split1	Heat pump heating cooling	Heat Pump System 1	Heat Pump System 1	n/a	n/a	Setback	New	NA	1	1

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01	02	03	04	05	06	07	08	09	10	11
HVAC - HEAT PUMPS										
Name	System Type	Number of Units	Heating			Cooling		Zonally Controlled	Compressor Type	HERS Verification
			HSPF/COP	Cap 47	Cap 17	SEER	EER/CEER			
Heat Pump System 1	Ductless MiniSplit HP	1	9	18000	10980	15	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	Verified SEER	Verified Refrigerant Charge	Verified HSPF	Verified Heating Cap 47	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Not Required	0	Not Required	Not Required	Yes	No	Yes	Yes

IAQ (INDOOR AIR QUALITY) FANS						
01	02	03	04	05	06	07
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness - SRE	IAQ Recovery Effectiveness - ASRE	HERS Verification
SFam IAQVentRpt	39	0.35	Exhaust	n/a	n/a	Yes

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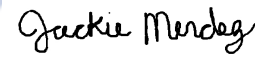
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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Stephen Likins	Documentation Author Signature: 
Company: T24-Reports.com	Signature Date: 2022-05-31 15:30:41
Address: Post Office Box 2393	CEA/ HERS Certification Identification (If applicable): R19-18-30113
City/State/Zip: Kings Beach, CA 96143	Phone: 530-583-3878
	
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California:	
<ol style="list-style-type: none"> 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. 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. 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: Jackie Mendez	Responsible Designer Signature: 
Company: JLM Designs	Date Signed: 2022-05-31 15:31:20
Address: 10 Brandywine Way	License: na
City/State/Zip: Martinez, CA 94553	Phone: 707-501-8944

Digitally signed by CalCERTS. This digital signature is provided in order to secure the content of this registered document, and in no way implies

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