Report Generated: 2023-06-26 15:25:35

Project Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR SOG

Calculation Date/Time: 2023-06-26T15:24:59-07:00

Calculation Description: Title 24 Analysis

Input File Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR

SOG.ribd22x

GENER	AL INFORMATION										
01	Project Name	2306-22-0336 Chula-Vista ADU 748 Long	6-22-0336 Chula-Vista ADU 748 Long Reverse 1BR SOG								
02	Run Title	Title 24 Analysis	e 24 Analysis								
03	Project Location	276 4th Avenue									
04	City	Chula Vista	05	Standards Version	2022						
06	Zip code	91910	07	Software Version	EnergyPro 9.1						
08	Climate Zone	10	09	Front Orientation (deg/ Cardinal)	All orientations						
10	Building Type	Single family	11	Number of Dwelling Units	1						
12	Project Scope	Newly Constructed	13	Number of Bedrooms	1						
14	Addition Cond. Floor Area (ft <sup>2</sup> )	0	15	Number of Stories	1						
16	Existing Cond. Floor Area (ft <sup>2</sup> )	n/a	17	Fenestration Average U-factor	0.3						
18	Total Cond. Floor Area (ft <sup>2</sup> )	748	19	Glazing Percentage (%)	11.63%						
20	ADU Bedroom Count	n/a									
			- 4								

COMPLIANCE RI	ESULTS
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

Report Version: 2022.0.000

Calculation Date/Time: 2023-06-26T15:24:59-07:00

Input File Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR

SOG.ribd22x

ENERGY DESIGN RATINGS											
		<b>Energy Design Ratings</b>		Compliance Margins							
	Source Energy (EDR1)	Efficiency <sup>1</sup> EDR (EDR2efficiency)			Efficiency <sup>1</sup> EDR (EDR2efficiency)	Total <sup>2</sup> EDR (EDR2total)					
Standard Design	37.9	38.1	56.8								
		Propose	d Design								
North Facing	36	32.4	53.7	1.9	5.7	3.1					
East Facing	37.1	37	56.2	0.8	1.1	0.6					
South Facing	36.2	32.7	53.9	1.7	5.4	2.9					
West Facing	37.1	36.7	56	0.8	1.4	0.8					
						•					

# RESULT<sup>3</sup>: PASS

Standard Design PV Capacity: 0.00 kWdc

**Calculation Description:** Title 24 Analysis

Proposed PV Capacity Scaling: North (0.00 kWdc) East (0.00 kWdc) South (0.00 kWdc) West (0.00 kWdc)

Registration Number: 423-P010110974A-000-000-0000000-0000 Registration Date/Time: 06/27/2023 14:21 HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document.

CA Building Energy Efficiency Standards - 2022 Residential Compliance Report Version: 2022.0.000 Schema Version: rev 20220901 Report Generated: 2023-06-26 15:25:35

<sup>&</sup>lt;sup>1</sup>Efficiency EDR includes improvements like a better building envelope and more efficient equipment

<sup>&</sup>lt;sup>2</sup>Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries

<sup>&</sup>lt;sup>3</sup>Building complies when source energy, efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2023-06-26T15:24:59-07:00

Input File Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR

SOG.ribd22x

ENERGY USE SUMMARY						
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft <sup>2</sup> -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft <sup>2</sup> -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft <sup>2</sup> -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft <sup>2</sup> -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0.64	2.85	1.34	9.74	-0.7	-6.89
Space Cooling	1.4	28.93	0.85	20.44	0.55	8.49
IAQ Ventilation	0.38	4.02	0.38	4.02	0	0
Water Heating	2.54	25.87	1.62	18.31	0.92	7.56
Self Utilization/Flexibility Credit				0		0
North Facing Efficiency Compliance Total	4.96	61.67	4.19	52.51	0.77	9.16
Space Heating	0.64	2.85	1.53	11.13	-0.89	-8.28
Space Cooling	1.4	28.93	1.12	26.56	0.28	2.37
IAQ Ventilation	0.38	4.02	0.38	4.02	0	0
Water Heating	2.54	25.87	1.62	18.28	0.92	7.59
Self Utilization/Flexibility Credit				0		0
East Facing Efficiency Compliance Total	4.96	61.67	4.65	59.99	0.31	1.68

Report Version: 2022.0.000

Schema Version: rev 20220901

Report Generated: 2023-06-26 15:25:35

CF1R-PRF-01E (Page 4 of 11)

Report Generated: 2023-06-26 15:25:35

Project Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR SOG

Calculation Date/Time: 2023-06-26T15:24:59-07:00

Calculation Description: Title 24 Analysis Input File Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR

ENERGY USE SUMMARY			SOG.ribd22x			
Energy Use	Standard Design Source Energy (EDR1) (kBtu/ft <sup>2</sup> -yr)	Standard Design TDV Energy (EDR2) (kTDV/ft <sup>2</sup> -yr)	Proposed Design Source Energy (EDR1) (kBtu/ft <sup>2</sup> -yr)	Proposed Design TDV Energy (EDR2) (kTDV/ft <sup>2</sup> -yr)	Compliance Margin (EDR1)	Compliance Margin (EDR2)
Space Heating	0.64	2.85	1.43	10.43	-0.79	-7.58
Space Cooling	1.4	28.93	0.84	20.16	0.56	8.77
IAQ Ventilation	0.38	4.02	0.38	4.02	0	0
Water Heating	2.54	25.87	1.63	18.34	0.91	7.53
Self Utilization/Flexibility Credit				0		0
South Facing Efficiency Compliance Total	4.96	61.67	4.28	52.95	0.68	8.72
Space Heating	0.64	2.85	1.53	11.06	-0.89	-8.21
Space Cooling	1.4	28.93	1.11	26.07	0.29	2.86
IAQ Ventilation	0.38	4.02	0.38	4.02	0	0
Water Heating	2.54	25.87	1.62	18.27	0.92	7.6
Self Utilization/Flexibility Credit		CIT		0		0
West Facing Efficiency Compliance Total	4.96	61.67	4.64	59.42	0.32	2.25

Report Version: 2022.0.000

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2023-06-26T15:24:59-07:00

Input File Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR

SOG.ribd22x

ENERGY USE INTENSITY				
	Standard Design (kBtu/ft <sup>2</sup> - yr )	Proposed Design (kBtu/ft <sup>2</sup> - yr )	Compliance Margin (kBtu/ft <sup>2</sup> - yr )	Margin Percentage
North Facing				
Gross EUI <sup>1</sup>	21.36	19.88	1.48	6.93
Net EUI <sup>2</sup>	21.36	19.88	1.48	6.93
East Facing				
Gross EUI <sup>1</sup>	21.36	20.62	0.74	3.46
Net EUI <sup>2</sup>	21.36	20.62	0.74	3.46
South Facing				
Gross EUI <sup>1</sup>	21.36	19.93	1.43	6.69
Net EUI <sup>2</sup>	21.36	19.93	1.43	6.69
West Facing				
Gross EUI <sup>1</sup>	21.36	20.6	0.76	3.56
Net EUI <sup>2</sup>	21.36	20.6	0.76	3.56
Natas		•		

Report Generated: 2023-06-26 15:25:35

<sup>1.</sup> Gross EUI is Energy Use Total (not including PV) / Total Building Area.

<sup>2.</sup> Net EUI is Energy Use Total (including PV) / Total Building Area.

# **CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD**

CF1R-PRF-01E (Page 6 of 11)

Project Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR SOG

**Calculation Description:** Title 24 Analysis

Calculation Date/Time: 2023-06-26T15:24:59-07:00

Input File Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR

SOG.ribd22x

REQUIRED PV SYS	REQUIRED PV SYSTEMS												
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 (%)		
0		Standard (14-17%)	Fixed	none	true	n/a	n/a	n/a	n/a	n/a			

#### **REQUIRED SPECIAL FEATURES**

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

- PV exception 2: No PV required when minimum PV size (Section 150.1(c)14) < 1.8 kWdc (0 kW)
- Insulation below roof deck
- 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 buildng tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry

- Quality insulation installation (QII)
- Indoor air quality ventilation
- Kitchen range hood
- Verified heat pump rated heating capacity

BUILDING - FEATURES INFORMA	ATION					
01 02		03	04	05	06	07
Project Name	Conditioned Floor Area (ft <sup>2</sup> )	Number of Dwelling Units	Number of Bedrooms	Number of Zones	Number of Ventilation Cooling Systems	Number of Water Heating Systems
2306-22-0336 Chula-Vista ADU 748 Long Reverse 1BR SOG 748		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 <sup>2</sup> )		Avg. Ceiling Height Water Heating System		Status					
New ADU	Conditioned	New HVAC1	748	8	DHW Sys 1	New					

Report Generated: 2023-06-26 15:25:35

Registration Number: 423-P010110974A-000-000-0000000-0000 Registration Date/Time: 06/27/2023 14:21 HERS Provider: CHEERS

NOTICE: This document has been generated by California Home Energy Efficiency Rating Services (CHEERS) using information uploaded by third parties not affiliated with or related to CHEERS. Therefore, CHEERS is not responsible for, and cannot guarantee, the accuracy or completeness of the information contained in this document. CA Building Energy Efficiency Standards - 2022 Residential Compliance

CF1R-PRF-01E (Page 7 of 11)

Project Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR SOG

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2023-06-26T15:24:59-07:00

Input File Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR

SOG.ribd22x

OPAQUE SURFACES	OPAQUE SURFACES											
01	02	03	04	05	06	07	08					
Name	Name Zone Construction		Azimuth	Orientation	Gross Area (ft <sup>2</sup> )	Window and Door Area (ft2)	Tilt (deg)					
New Front Wall	New ADU	R-21 w/R-5 Wall	0	Front	352	56	90					
New Left Wall	New ADU	R-21 w/R-5 Wall	90	Left	136	0	90					
New Back Wall	New ADU	R-21 w/R-5 Wall	180	Back	352	51	90					
New Right Wall	New ADU	R-21 w/R-5 Wall	270	Right	146	0	90					
New Roof Attic	New ADU	R-38 w/R-19 B.R.D.	n/a	n/a	748	n/a	n/a					

ATTIC											
01	01 02 03		04 05		06	07	08				
Name	Construction	Туре	Type Roof Rise (x in 12) Roof Reflectance		Roof Emittance	Radiant Barrier	Cool Roof				
Attic New ADU	Attic RoofNew ADU	Ventilated	4.5	0.1	0.85	No	No				

FENESTRATION /	GLAZING												
01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Туре	Surface	Orientation	Azimuth	Width (ft)	Height (ft)	Mult.	Area (ft <sup>2</sup> )	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Window W6	Window	New Front Wall	Front	0			1	24	0.3	NFRC	0.23	NFRC	Bug Screen
Window W1	Window	New Front Wall	Front	0			1	12	0.3	NFRC	0.23	NFRC	Bug Screen
Window W2	Window	New Back Wall	Back	180			1	24	0.3	NFRC	0.23	NFRC	Bug Screen
Window W3	Window	New Back Wall	Back	180			1	3	0.3	NFRC	0.23	NFRC	Bug Screen
Window W4	Window	New Back Wall	Back	180			1	12	0.3	NFRC	0.23	NFRC	Bug Screen
Window W5	Window	New Back Wall	Back	180			1	12	0.3	NFRC	0.23	NFRC	Bug Screen

Report Generated: 2023-06-26 15:25:35

Report Version: 2022.0.000

Report Generated: 2023-06-26 15:25:35

Project Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR SOG

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2023-06-26T15:24:59-07:00

Input File Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR

SOG.ribd22x

OPAQUE DOORS									
01	02	03	04						
Name	Side of Building	Area (ft <sup>2</sup> )	U-factor						
Front Door D1	New Front Wall	20	0.2						

SLAB FLOORS							
01	02	03	04	05	06	07	08
Name	Zone	Area (ft <sup>2</sup> )	Perimeter (ft)	Edge Insul. R-value and Depth	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
New Slab-on-Grade	New ADU	748	0.1	none	0	80%	No

OPAQUE SURFACE CONSTR	RUCTIONS						
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-21 w/R-5 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / 5	0.048	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Sheathing / Insulation: R-5 Sheathing Exterior Finish: 3 Coat Stucco
Attic RoofNew ADU	Attic Roofs	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-19	None / 0	0.059	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-13.0 / 2x4 Around Roof Joists: R-6.0 insul.
R-38 w/R-19 B.R.D.	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O. C.	R-38	None / None	0.025	Over Ceiling Joists: R-28.9 insul. Cavity / Frame: R-9.1 / 2x4 Inside Finish: Gypsum Board

Report Version: 2022.0.000

Calculation Date/Time: 2023-06-26T15:24:59-07:00

Input File Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR

(Page 9 of 11)

Report Generated: 2023-06-26 15:25:35

Calculation Description: Title 24 Analysis

SOG.ribd22x

		0000022					
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			
Required	Not Required	N/A	n/a	n/a			

WATER HEATING SYS	TEMS							
01	02	03	04	05	06	07	08	09
Name	System Type	Distribution Type	Water Heater Name	Number of Units	Solar Heating System	Compact Distribution	HERS Verification	Water Heater Name (#)
DHW Sys 1	Domestic Hot Water (DHW)	Standard	DHW Heater 1	1	n/a	None	n/a	DHW Heater 1 (1)

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	50	AOSmith	AOSmithHPTU50	Outside	New ADU	New ADU

WATER HEATING - HERS VE	RIFICATION					
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	Not Required None Not Required		Not Required

Report Version: 2022.0.000

CF1R-PRF-01E (Page 10 of 11)

Project Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR SOG

Calculation Description: Title 24 Analysis

Calculation Date/Time: 2023-06-26T15:24:59-07:00

Input File Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR

SOG.ribd22x

								.Hbu							
SPACE CONDITIONIN	G SYSTEMS														
01	02	03			04		05		06			07	08		09
Name	System Type	Heating Unit	Name	Heatir	g Equipme Count	ent C			g Equipment Count			Distribution Name		Required Thermostat Type	
New HVAC1	Heat pump heating cooling	Heat Pump S	System		1 Heat Pump System 1			1	n/a		n/a		Setback		
HVAC - HEAT PUMPS						H	11		×						
01	02	03	04		05	06	07	11	08	09	10	11	12		13
					Heating	g				Cooling					
Name	System Type	Number of Units	Efficie Typ	ncy	HSPF / HSPF2 / COP	Cap 47	7 Cap 17		ciency Type	SEER / SEER2	EER / EER / CEER	Controlled Type		HERS Verification	
Heat Pump System 1	Ductless MiniSplit HP	1	HSPI	F2	7.5	36000	24000	EER	2SEER2	14.3	11.7	Not Zonal	Single Speed		eat Pump System 1-hers-htpump
HVAC HEAT PUMPS -	HERS VERIFICATION								$\overline{}$						
01	02	03			04		05			06		07	08		09
Name	Verified Airflow	Airflow Ta	rget	Verifi	ed EER/EEF	R2	Verified SEER/SEER	2		l Refrigerant harge		/erified PF/HSPF2	Verified Hea	ting	Verified Heating Cap 17
Heat Pump System 1-hers-htpump	Not Required	0		No	t Required		Not Require	d		No		No	Yes		Yes
INDOOR AIR QUALIT	Y (IAQ) FANS														
01	02	03			04		05			06	T	07	08		09
Dwelling Unit	Airflow (CFM)	Fan Effica (W/CFN	-	IAC	IAQ Fan Type		Includes Heat/Energy Recovery?		IAQ Recovery Effectiveness - SRE		Includes Fault Indicator Display?		HERS Verification		Status

No

37

SFam IAQVentRpt

No

n/a

0.35

Exhaust

Yes

# **CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD**

CF1R-PRF-01E (Page 11 of 11)

Project Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR SOG

Calculation Date/Time: 2023-06-26T15:24:59-07:00

**Calculation Description:** Title 24 Analysis

Input File Name: 2306-22-0336 Chula-Vista ADU -- 748 Long -- Reverse 1BR

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT							
1. I certify that this Certificate of Compliance documentation is accurate and cor	mplete.						
Documentation Author Name: Kenneth Ponce	Documentation Author Signature:  Kenneth Ponce						
Company: So Cal Title 24	Signature Date: 06/27/2023						
Address: 8659 Red Oak Street, Suite I	CEA/ HERS Certification Identification (If applicable):						
City/State/Zip: Rancho Cucamonga, CA 91730	Phone: 909-257-7547						
RESPONSIBLE PERSON'S DECLARATION STATEMENT							
2. I certify that the energy features and performance specifications identified on	responsibility for the building design identified on this Certificate of Compliance.  It this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.  Ficate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, or approval with this building permit application.						
Responsible Designer Name: Mike Moore	Responsible Designer Signature:  Mike Moore						
Company: Snap ADU	Date Signed: 06/27/2023						
Address: PO Box 2685	License:						
City/State/Zip: Carlsbad, CA 92018	Phone: (760) 259-1985						

Report Version: 2022.0.000

Schema Version: rev 20220901

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.