GENERAL INFORMATION					
01	Project Name	2306-22-0336 Chula-Vista ADU -- 748 Long -- Standard 2BR RF			
02	Run Title	Title 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	2
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	0.3
18	Total Cond. Floor Area (ft^2)	748	19	Glazing Percentage (%)	11.63%
20	ADU Bedroom Count	n/a			

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**

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ENERGY DESIGN RATINGS

	Energy Design Ratings			Compliance Margins		
	Source Energy (EDR1)	**Efficiency[1] EDR (EDR2efficiency)**	**Total[2] EDR (EDR2total)**	**Source Energy (EDR1)**	**Efficiency[1] EDR (EDR2efficiency)**	**Total[2] EDR (EDR2total)**
Standard Design	33.5	41.1	33.9			
Proposed Design						
North Facing	31.2	34.6	30.5	2.3	6.5	3.4
East Facing	32.1	38.7	32.6	1.4	2.4	1.3
South Facing	31.3	34.7	30.5	2.2	6.4	3.4
West Facing	32.1	38.3	32.4	1.4	2.8	1.5
RESULT[3]: PASS						

[1]Efficiency EDR includes improvements like a better building envelope and more efficient equipment

[2]Total EDR includes efficiency and demand response measures such as photovoltaic (PV) system and batteries

[3]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

- Standard Design PV Capacity: 2.13 kWdc
- Proposed PV Capacity Scaling: North (2.13 kWdc) East (2.13 kWdc) South (2.13 kWdc) West (2.13 kWdc)

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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	0.51	2.28	1.07	7.8	-0.56	-5.52
Space Cooling	2.16	41.03	1.53	31.34	0.63	9.69
IAQ Ventilation	0.46	4.85	0.46	4.85	0	0
Water Heating	2.74	27.78	1.8	19.88	0.94	7.9
Self Utilization/Flexibility Credit				0		0
North Facing Efficiency Compliance Total	**5.87**	**75.94**	**4.86**	**63.87**	**1.01**	**12.07**
Space Heating	0.51	2.28	1.22	8.92	-0.71	-6.64
Space Cooling	2.16	41.03	1.8	37.75	0.36	3.28
IAQ Ventilation	0.46	4.85	0.46	4.85	0	0
Water Heating	2.74	27.78	1.8	19.87	0.94	7.91
Self Utilization/Flexibility Credit				0		0
East Facing Efficiency Compliance Total	**5.87**	**75.94**	**5.28**	**71.39**	**0.59**	**4.55**

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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	0.51	2.28	1.14	8.38	-0.63	-6.1
Space Cooling	2.16	41.03	1.52	31	0.64	10.03
IAQ Ventilation	0.46	4.85	0.46	4.85	0	0
Water Heating	2.74	27.78	1.8	19.93	0.94	7.85
Self Utilization/Flexibility Credit				0		0
South Facing Efficiency Compliance Total	**5.87**	**75.94**	**4.92**	**64.16**	**0.95**	**11.78**
Space Heating	0.51	2.28	1.23	8.94	-0.72	-6.66
Space Cooling	2.16	41.03	1.79	37.14	0.37	3.89
IAQ Ventilation	0.46	4.85	0.46	4.85	0	0
Water Heating	2.74	27.78	1.8	19.87	0.94	7.91
Self Utilization/Flexibility Credit				0		0
West Facing Efficiency Compliance Total	**5.87**	**75.94**	**5.28**	**70.8**	**0.59**	**5.14**

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ENERGY USE INTENSITY

	Standard Design (kBtu/ft^2 - yr)	Proposed Design (kBtu/ft^2 - yr)	Compliance Margin (kBtu/ft^2 - yr)	Margin Percentage
North Facing				
Gross EUI[1]	25.21	23.34	1.87	7.42
Net EUI[2]	8.61	6.74	1.87	21.72
East Facing				
Gross EUI[1]	25.21	24.16	1.05	4.17
Net EUI[2]	8.61	7.56	1.05	12.2
South Facing				
Gross EUI[1]	25.21	23.35	1.86	7.38
Net EUI[2]	8.61	6.76	1.85	21.49
West Facing				
Gross EUI[1]	25.21	24.14	1.07	4.24
Net EUI[2]	8.61	7.55	1.06	12.31

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.

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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 (%)
2.13	NA	Standard (14-17%)	Fixed	none	true	150-270	n/a	n/a	<=7:12	96	98

REQUIRED SPECIAL FEATURES

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

- 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 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
2306-22-0336 Chula-Vista ADU -- 748 Long -- Standard 2BR RF	748	1	2	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	Status
New ADU	Conditioned	New HVAC1	748	8	DHW Sys 1	New

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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 (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	144	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	136	0	90
New Roof Attic	New ADU	R-38 w/R-19 B.R.D.	n/a	n/a	748	n/a	n/a
New Raised Floor	New ADU	R-19 Floor Crawlspace	n/a	n/a	748	n/a	n/a

ATTIC

01	02	03	04	05	06	07	08
Name	**Construction**	**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	**Type**	**Surface**	**Orientation**	**Azimuth**	**Width (ft)**	**Height (ft)**	**Mult.**	**Area (ft^2)**	**U-factor**	**U-factor Source**	**SHGC**	**SHGC Source**	**Exterior Shading**
Window W1	Window	New Front Wall	Front	0			1	12	0.3	NFRC	0.23	NFRC	Bug Screen
Window W6	Window	New Front Wall	Front	0			1	24	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
Window W4	Window	New Back Wall	Back	180			1	12	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 W2	Window	New Back Wall	Back	180			1	24	0.3	NFRC	0.23	NFRC	Bug Screen

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OPAQUE DOORS

01	02	03	04
Name	**Side of Building**	**Area (ft^2)**	**U-factor**
Front Door D1	New Front Wall	20	0.2

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-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-19 Floor Crawlspace	Floors Over Crawlspace	Wood Framed Floor	2x10 @ 16 in. O. C.	R-19	None / None	0.046	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-19 / 2x10
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

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

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WATER HEATING SYSTEMS

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 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
Name	**System Type**	**Heating Unit Name**	**Heating Equipment Count**	**Cooling Unit Name**	**Cooling Equipment Count**	**Fan Name**	**Distribution Name**	**Required Thermostat Type**
New HVAC1	Heat pump heating cooling	Heat Pump System 1	1	Heat Pump System 1	1	n/a	n/a	Setback

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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
			Efficiency Type	HSPF / HSPF2 / COP	Cap 47	Cap 17	Efficiency Type	SEER / SEER2	EER / EER / CEER			
Heat Pump System 1	Ductless MiniSplit HP	1	HSPF2	7.5	36000	24000	EER2SEER2	14.3	11.7	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

INDOOR AIR QUALITY (IAQ) FANS

01	02	03	04	05	06	07	08	09
Dwelling Unit	Airflow (CFM)	Fan Efficacy (W/CFM)	IAQ Fan Type	Includes Heat/Energy Recovery?	IAQ Recovery Effectiveness - SRE	Includes Fault Indicator Display?	HERS Verification	Status
SFam IAQVentRpt	45	0.35	Exhaust	No	n/a	No	Yes	

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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: 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	
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: 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

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