CERTIFICATE OF COMPLIANCE

CF1R-PRF-01E

Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW   **Calculation Date/Time:** 2020-03-19T18:59:20-07:00   **(Page 1 of 30)**

Calculation Description: TDSv30 V06R12 V06 R12 UGLASS15 NGAS PVSTD   **Input File Name:** instance.ribd22

GENERAL INFORMATION					
01	**Project Name**	2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW			
02	**Run Title**	TDSv30 V06R12 V06 R12 UGLASS15 NGAS PVSTD			
03	**Project Location**	1516 Ninth St			
04	**City**	CTZ11S22A	05	**Standards Version**	2022
06	**Zip code**	95814	07	**Software Version**	CBECC-Res 2022.0.2 RV
08	**Climate Zone**	11	09	**Front Orientation (deg/ Cardinal)**	0
10	**Building Type**	Multifamily	11	**Number of Dwelling Units**	36
12	**Project Scope**	NewConstruction	13	**Number of Bedrooms**	60
14	**Addition Cond. Floor Area (ft^2)**	0	15	**Number of Stories**	3
16	**Existing Cond. Floor Area (ft^2)**	n/a	17	**Fenestration Average U-factor**	0.3
18	**Total Cond. Floor Area (ft^2)**	39372	19	**Glazing Percentage (%)**	9.21%
20	**ADU Bedroom Count**	n/a	21	**ADU Conditioned Floor Area**	n/a
22	**Is Natural Gas Available?**	Yes			

COMPLIANCE RESULTS		
01	**Building Does Not Comply**	
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 RATING

	Energy Design Ratings		Compliance Margins	
	Efficiency[1] (EDR)	Total[2] (EDR)	Efficiency[1] (EDR)	Total[2] (EDR)
Standard Design	68.1	39.7		
Proposed Design	72.8	44.4	-4.7	-4.7
RESULT: [3]: DOES NOT COMPLY				

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

- Standard Design PV Capacity: 101.92 kWdc
- PV System resized to 101.92 kWdc (a factor of 101.919) 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	18.84	19.89	-1.05	-5.6
Space Cooling	36.68	38.3	-1.62	-4.4
IAQ Ventilation	11.03	11.03	0	0
Water Heating	27.14	36.93	-9.79	-36.1
Self Utilization Credit	n/a	0	0	n/a
Compliance Energy Total	**93.69**	**106.15**	**-12.46**	**-13.3**

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 (%)
101.92	NA	Standard	Fixed (roof mount)	none	true	150-270	n/a	n/a	<=7:12	96	100

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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.
•   PV System: 101.92 kWdc   •   Indoor air quality, balanced fan   •   Non-standard duct location (any location other than attic)   •   Multifamily: Recirculating with no control (continuous pumping)

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
Building-level Verifications: •   Quality insulation installation (QII)   •   Indoor air quality ventilation   •   Kitchen range hood   Cooling System Verifications: •   Minimum Airflow   •   Verified Refrigerant Charge   •   Fan Efficacy Watts/CFM   Heating System Verifications: •   -- None --   HVAC Distribution System Verifications: •   Duct leakage testing   •   Ducts located entirely in conditioned space confirmed by duct leakage testing   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
2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW	39372	36	60	3	0	36

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ZONE INFORMATION				
01	02	03	04	05
Zone Name	Zone Type	Zone Floor Area (ft^2)	Avg. Ceiling Height	Number of Dwelling Units
Zone1	Conditioned	9916	8	10
Zone2	Conditioned	11536	8	13
Zone3	Conditioned	11536	8	13

DWELLING UNIT INFORMATION		
01	02	03
Dwelling Unit Name	Dwelling Unit Type	Zone
OneBedroomZone1-(1/4)	OneBedroom1	Zone1
OneBedroomZone1-(2/4)	OneBedroom1	Zone1
OneBedroomZone1-(3/4)	OneBedroom1	Zone1
OneBedroomZone1-(4/4)	OneBedroom1	Zone1
TwoBedroomZone1-(1/4)	TwoBedroom1	Zone1
TwoBedroomZone1-(2/4)	TwoBedroom1	Zone1
TwoBedroomZone1-(3/4)	TwoBedroom1	Zone1
TwoBedroomZone1-(4/4)	TwoBedroom1	Zone1
ThreeBedroomZone1-(1/2)	ThreeBedroom1	Zone1
ThreeBedroomZone1-(2/2)	ThreeBedroom1	Zone1
OneBedroomZone2-(1/4)	OneBedroom2	Zone2
OneBedroomZone2-(2/4)	OneBedroom2	Zone2
OneBedroomZone2-(3/4)	OneBedroom2	Zone2
OneBedroomZone2-(4/4)	OneBedroom2	Zone2
TwoBedroomZone2-(1/4)	TwoBedroom2	Zone2
TwoBedroomZone2-(2/4)	TwoBedroom2	Zone2
TwoBedroomZone2-(3/4)	TwoBedroom2	Zone2
TwoBedroomZone2-(4/4)	TwoBedroom2	Zone2

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DWELLING UNIT INFORMATION		
01	**02**	**03**
Dwelling Unit Name	**Dwelling Unit Type**	**Zone**
ThreeBedroomZone2-(1/2)	ThreeBedroom2	Zone2
ThreeBedroomZone2-(2/2)	ThreeBedroom2	Zone2
StudioZone2-(1/3)	Studio2	Zone2
StudioZone2-(2/3)	Studio2	Zone2
StudioZone2-(3/3)	Studio2	Zone2
OneBedroomZone3-(1/4)	OneBedroom3	Zone3
OneBedroomZone3-(2/4)	OneBedroom3	Zone3
OneBedroomZone3-(3/4)	OneBedroom3	Zone3
OneBedroomZone3-(4/4)	OneBedroom3	Zone3
TwoBedroomZone3-(1/4)	TwoBedroom3	Zone3
TwoBedroomZone3-(2/4)	TwoBedroom3	Zone3
TwoBedroomZone3-(3/4)	TwoBedroom3	Zone3
TwoBedroomZone3-(4/4)	TwoBedroom3	Zone3
ThreeBedroomZone3-(1/2)	ThreeBedroom3	Zone3
ThreeBedroomZone3-(2/2)	ThreeBedroom3	Zone3
StudioZone3-(1/3)	Studio3	Zone3
StudioZone3-(2/3)	Studio3	Zone3
StudioZone3-(3/3)	Studio3	Zone3

DWELLING UNIT TYPES						
01	**02**	**03**	**04**	**05**	**06**	**07**
Name	CFA (ft2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
OneBedroom1	720	1	4	OneBedroomZone1 1/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3	DHWGas	Specify Individual IAQ Fans

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DWELLING UNIT TYPES

01	02	03	04	05	06	07
Name	CFA (ft2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
				OneBedroomZone1 2/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 OneBedroomZone1 3/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 OneBedroomZone1 4/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3		
OneBedroom2	720	1	4	OneBedroomZone2 1/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 OneBedroomZone2 2/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 OneBedroomZone2 3/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 OneBedroomZone2 4/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3	DHWGas	Specify Individual IAQ Fans
OneBedroom3	720	1	4	OneBedroomZone3 1/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 OneBedroomZone3 2/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 OneBedroomZone3 3/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 OneBedroomZone3 4/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3	DHWGas	Specify Individual IAQ Fans

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DWELLING UNIT TYPES						
01	02	03	04	05	06	07
Name	CFA (ft2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
TwoBedroom1	1054	2	4	TwoBedroomZone1 1/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 TwoBedroomZone1 2/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 TwoBedroomZone1 3/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 TwoBedroomZone1 4/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3	DHWGas	Specify Individual IAQ Fans
TwoBedroom2	1054	2	4	TwoBedroomZone2 1/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 TwoBedroomZone2 2/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 TwoBedroomZone2 3/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 TwoBedroomZone2 4/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3	DHWGas	Specify Individual IAQ Fans
TwoBedroom3	1054	2	4	TwoBedroomZone3 1/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 TwoBedroomZone3 2/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 TwoBedroomZone3 3/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3	DHWGas	Specify Individual IAQ Fans

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DWELLING UNIT TYPES						
01	02	03	04	05	06	07
Name	CFA (ft2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
				TwoBedroomZone3 4/4 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3		
ThreeBedroom1	1410	3	2	ThreeBedroomZone1 1/2 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 ThreeBedroomZone1 2/2 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3	DHWGas	Specify Individual IAQ Fans
ThreeBedroom2	1410	3	2	ThreeBedroomZone2 1/2 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 ThreeBedroomZone2 2/2 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3	DHWGas	Specify Individual IAQ Fans
ThreeBedroom3	1410	3	2	ThreeBedroomZone3 1/2 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 ThreeBedroomZone3 2/2 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3	DHWGas	Specify Individual IAQ Fans
Studio2	540	1	3	StudioZone2 1/3 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 StudioZone2 2/3 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 StudioZone2 3/3 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3	DHWGas	Specify Individual IAQ Fans

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DWELLING UNIT TYPES

01	02	03	04	05	06	07
Name	CFA (ft2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
Studio3	540	1	3	StudioZone3 1/3 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 StudioZone3 2/3 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3 StudioZone3 3/3 | CoolingComponent:HeatingComponent:AirDistributionSystem-Res:HVACFan-Furnace:1:3	DHWGas	Specify Individual IAQ Fans

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)
Zone1WallFront	Zone1	Exterior Wall Cons	0	Front	1334.5	434.25	90
Zone1WallLeft	Zone1	Exterior Wall Cons	90	Left	578	153	90
Zone1WallBack	Zone1	Exterior Wall Cons	180	Back	1334.5	434.25	90
Zone1WallRight	Zone1	Exterior Wall Cons	270	Right	578	153	90
Zone2WallFront	Zone2	Exterior Wall Cons	0	Front	1640.5	434.25	90
Zone2WallLeft	Zone2	Exterior Wall Cons	90	Left	578	153	90
Zone2WallBack	Zone2	Exterior Wall Cons	180	Back	1334.5	434.25	90
Zone2WallRight	Zone2	Exterior Wall Cons	270	Right	578	153	90
Zone3WallFront	Zone3	Exterior Wall Cons	0	Front	1640.5	434.25	90
Zone3WallLeft	Zone3	Exterior Wall Cons	90	Left	578	153	90
Zone3WallBack	Zone3	Exterior Wall Cons	180	Back	1334.5	434.25	90
Zone3WallRight	Zone3	Exterior Wall Cons	270	Right	578	153	90
Zone3ToAtticCeiling	Zone3	Ceiling Below Attic Cons	n/a	n/a	11536	n/a	n/a
Corridor3ToAtticCeiling	Corridor3	Ceiling Below Attic Cons	n/a	n/a	1444	n/a	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 (ft2)	Tilt (deg)
Stairs3ToAtticCeiling	Stairs3	Ceiling Below Attic Cons	n/a	n/a	144	n/a	n/a
Zone2ToZone1InteriorFloor	Zone2	Interior Floor	n/a	n/a	9916	n/a	n/a
Zone2ToBusinessCenter1InteriorFloor	Zone2	Interior Floor	n/a	n/a	324	n/a	n/a
Zone2ToLeasingOffice1InteriorFloor	Zone2	Interior Floor	n/a	n/a	216	n/a	n/a
Zone2ToFitnessCenter1InteriorFloor	Zone2	Interior Floor	n/a	n/a	324	n/a	n/a
Zone2ToLaundry1InteriorFloor	Zone2	Interior Floor	n/a	n/a	108	n/a	n/a
Zone2ToLobby1InteriorFloor	Zone2	Interior Floor	n/a	n/a	540	n/a	n/a
Zone2ToMechanicalRoom1InteriorFloor	Zone2	Interior Floor	n/a	n/a	108	n/a	n/a
Zone3ToZone2InteriorFloor	Zone3	Interior Floor	n/a	n/a	11536	n/a	n/a
Corridor2ToCorridor1InteriorFloor	Corridor2	Interior Floor	n/a	n/a	1444	n/a	n/a
Corridor3ToCorridor2InteriorFloor	Corridor3	Interior Floor	n/a	n/a	1444	n/a	n/a
Stairs2ToStairs1InteriorFloor	Stairs2	Interior Floor	n/a	n/a	144	n/a	n/a
Stairs3ToStairs2InteriorFloor	Stairs3	Interior Floor	n/a	n/a	144	n/a	n/a
Laundry1WallBack	Laundry1	Exterior Wall Cons	180	Back	76.5	20.25	90
LeasingOffice1WallFront	LeasingOffice1	Exterior Wall Cons	0	Front	153	40.5	90
Lobby1WallFront	Lobby1	Exterior Wall Cons	0	Front	153	80.5	90

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OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft²)	Window and Door Area (ft2)	Tilt (deg)
MechanicalRoom1Wall Back	MechanicalRoom1	Exterior Wall Cons	180	Back	76.5	0	90
Stairs1WallBack	Stairs1	Exterior Wall Cons	180	Back	153	0	90
Stairs2WallBack	Stairs2	Exterior Wall Cons	180	Back	153	0	90
Stairs3WallBack	Stairs3	Exterior Wall Cons	180	Back	153	0	90

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	Attic Roof Cons	Ventilated	0	0.1	0.85	Yes	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 (ft²)	U-factor	U-factor Source	SHGC	SHGC Source	Exterior Shading
Zone1WinFront	Window	Zone1WallFront	Front	0	3	5	28	434.25	0.3	NFRC	0.23	NFRC	Bug Screen
Zone1WinLeft	Window	Zone1WallLeft	Left	90	3	5	10	153	0.3	NFRC	0.23	NFRC	Bug Screen
Zone1WinBack	Window	Zone1WallBack	Back	180	3	5	28	434.25	0.3	NFRC	0.23	NFRC	Bug Screen
Zone1WinRight	Window	Zone1WallRight	Right	270	3	5	10	153	0.3	NFRC	0.23	NFRC	Bug Screen
Zone2WinFront	Window	Zone2WallFront	Front	0	3	5	28	434.25	0.3	NFRC	0.23	NFRC	Bug Screen
Zone2WinLeft	Window	Zone2WallLeft	Left	90	3	5	10	153	0.3	NFRC	0.23	NFRC	Bug Screen
Zone2WinBack	Window	Zone2WallBack	Back	180	3	5	28	434.25	0.3	NFRC	0.23	NFRC	Bug Screen
Zone2WinRight	Window	Zone2WallRight	Right	270	3	5	10	153	0.3	NFRC	0.23	NFRC	Bug Screen

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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
Zone3WinFront	Window	Zone3WallFront	Front	0	3	5	28	434.25	0.3	NFRC	0.23	NFRC	Bug Screen
Zone3WinLeft	Window	Zone3WallLeft	Left	90	3	5	10	153	0.3	NFRC	0.23	NFRC	Bug Screen
Zone3WinBack	Window	Zone3WallBack	Back	180	3	5	28	434.25	0.3	NFRC	0.23	NFRC	Bug Screen
Zone3WinRight	Window	Zone3WallRight	Right	270	3	5	10	153	0.3	NFRC	0.23	NFRC	Bug Screen
Laundry1WinBack	Window	Laundry1WallBack	Back	180	3	5	1	20.25	0.3	NFRC	0.23	NFRC	Bug Screen
LeasingOffice1WinFront	Window	LeasingOffice1WallFront	Front	0	3	5	2	40.5	0.3	NFRC	0.23	NFRC	Bug Screen
Lobby1WinFront	Window	Lobby1WallFront	Front	0	3	5	2	40.5	0.3	NFRC	0.23	NFRC	Bug Screen

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Lobby1DoorFront	Lobby1WallFront	40	0.2

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft2)	Perimeter (ft)	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
Zone1Slab	Zone1	9916	450	None	80%	No
Corridor1Slab	Corridor1	1444	0	None	100%	No
BusinessCenter1Slab	BusinessCenter1	324	0	None	100%	No
FitnessCenter1Slab	FitnessCenter1	324	0	None	100%	No
Laundry1Slab	Laundry1	108	9	None	100%	No

Registration Number: Registration Date/Time: HERS Provider:

Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW **Calculation Date/Time:** 2020-03-19T18:59:20-07:00

Calculation Description: TDSv30 V06R12 V06 R12 UGLASS15 NGAS PVSTD **Input File Name:** instance.ribd22

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft2)	Perimeter (ft)	Edge Insul. R-value and Depth	Carpeted Fraction	Heated
LeasingOffice1Slab	LeasingOffice1	216	18	None	100%	No
Lobby1Slab	Lobby1	540	18	None	100%	No
MechanicalRoom1Slab	MechanicalRoom1	108	9	None	0%	No
Stairs1Slab	Stairs1	144	18	None	0%	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
Exterior Wall Cons	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-15	None / R-4	0.059	Inside Finish: Gypsum Board Cavity / Frame: R-15 / 2x6 Sheathing / Insulation: R-4 Sheathing Exterior Finish: Synthetic Stucco
IntWall Cons	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O. C.	R-21	None / None	0.064	Inside Finish: Gypsum Board Cavity / Frame: R-21 / 2x6 Other Side Finish: Gypsum Board
Attic Roof Cons	Attic Roofs	Built-up Roof	2x4 @ 24 in. O. C.	R-0	None / None	0.633	Roofing: 5 PSF (Normal Gravel) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: no insul. / 2x4
Ceiling Below Attic Cons	Ceilings (below attic)	Wood Framed Ceiling	2x4 Bottom Chord of Truss @ 24 in. O. C.	R-27	None / None	0.035	Over Ceiling Joists: R-17.9 insul. Cavity / Frame: R-9.1 / 2x4 Btm Chrd Inside Finish: Gypsum Board

Registration Number:

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Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW

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Calculation Description: TDSv30 V06R12 V06 R12 UGLASS15 NGAS PVSTD

Input File Name: instance.ribd22

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)	Quality Installation of Spray Foam Insulation	Building Envelope Air Leakage	CFM50
Required	Not Required	Not Required	n/a

WATER HEATING SYSTEMS

01	02	03	04	05	06	07	08	09
Name	System Type	Number of Systems in Building	Multi-Family Distribution Type	Dwelling Unit Distribution Type	Water Heater Name (#)	Solar Heating System	Compact Distribution	HERS Verification
DHWGas	Domestic Hot Water (DHW)	1	Multi-family: Recirculating with no control (continuous pumping)	Standard Distribution System	Gas (3)	n/a	None	n/a

Registration Number:

Registration Date/Time:

HERS Provider:

CERTIFICATE OF COMPLIANCE

CF1R-PRF-01E

Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW

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Calculation Description: TDSv30 V06R12 V06 R12 UGLASS15 NGAS PVSTD

Input File Name: instance.ribd22

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heating Element Type	Tank Type	# 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
Gas	Gas	Commercial Storage	108	100	0.8-TE	75001-Btu/Hr	0	0.020000	n/a	n/a	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
OneBedroomZone1 1/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
OneBedroomZone1 2/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
OneBedroomZone1 3/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
OneBedroomZone1 4/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
TwoBedroomZone1 1/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
TwoBedroomZone1 2/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
TwoBedroomZone1 3/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
TwoBedroomZone1 4/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
ThreeBedroomZone1 1/2 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
ThreeBedroomZone1 2/2 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required

Registration Number:

Registration Date/Time:

HERS Provider:

CERTIFICATE OF COMPLIANCE

CF1R-PRF-01E

Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW

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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
OneBedroomZone2 1/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
OneBedroomZone2 2/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
OneBedroomZone2 3/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
OneBedroomZone2 4/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
TwoBedroomZone2 1/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
TwoBedroomZone2 2/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
TwoBedroomZone2 3/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
TwoBedroomZone2 4/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
ThreeBedroomZone2 1/2 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
ThreeBedroomZone2 2/2 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
StudioZone2 1/3 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
StudioZone2 2/3 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
StudioZone2 3/3 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
OneBedroomZone3 1/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
OneBedroomZone3 2/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required

Registration Number:

Registration Date/Time:

HERS Provider:

CERTIFICATE OF COMPLIANCE

CF1R-PRF-01E

Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW

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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
OneBedroomZone3 3/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
OneBedroomZone3 4/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
TwoBedroomZone3 1/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
TwoBedroomZone3 2/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
TwoBedroomZone3 3/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
TwoBedroomZone3 4/4 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
ThreeBedroomZone3 1/2 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
ThreeBedroomZone3 2/2 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
StudioZone3 1/3 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
StudioZone3 2/3 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required
StudioZone3 3/3 | DHWGas	Not Required	Not Required	Not Required	None	Not Required	Not Required	Not Required

Not useable for compliance

Registration Number:

Registration Date/Time:

HERS Provider:

CA Building Energy Efficiency Standards - 2019 Residential Compliance

Report Version: 2019.1.108
Schema Version: rev 20200101

Report Generated: 2020-03-19   19:11:02

Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW

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Calculation Description: TDSv30 V06R12 V06 R12 UGLASS15 NGAS PVSTD

Input File Name: instance.ribd22

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
OneBedroomZone1 1/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
OneBedroomZone1 2/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
OneBedroomZone1 3/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
OneBedroomZone1 4/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
TwoBedroomZone1 1/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1

Registration Number:

Registration Date/Time:

HERS Provider:

Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW   **Calculation Date/Time:** 2020-03-19T18:59:20-07:00

Calculation Description: TDSv30 V06R12 V06 R12 UGLASS15 NGAS PVSTD   **Input File Name:** instance.ribd22

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
TwoBedroomZone1 2/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
TwoBedroomZone1 3/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
TwoBedroomZone1 4/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
ThreeBedroomZone1 1/2 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
ThreeBedroomZone1 2/2 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
OneBedroomZone2 1/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1

Registration Number: Registration Date/Time: HERS Provider:

Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW **Calculation Date/Time:** 2020-03-19T18:59:20-07:00 **(Page 20 of 30)**

Calculation Description: TDSv30 V06R12 V06 R12 UGLASS15 NGAS PVSTD **Input File Name:** instance.ribd22

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
OneBedroomZone2 2/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
OneBedroomZone2 3/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
OneBedroomZone2 4/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
TwoBedroomZone2 1/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
TwoBedroomZone2 2/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
TwoBedroomZone2 3/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1

Registration Number: Registration Date/Time: HERS Provider:

Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW

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Calculation Description: TDSv30 V06R12 V06 R12 UGLASS15 NGAS PVSTD

Input File Name: instance.ribd22

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
TwoBedroomZone2 4/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
ThreeBedroomZone2 1/2 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
ThreeBedroomZone2 2/2 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
StudioZone2 1/3 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
StudioZone2 2/3 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
StudioZone2 3/3 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1

Registration Number:

Registration Date/Time:

HERS Provider:

Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW   **Calculation Date/Time:** 2020-03-19T18:59:20-07:00

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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
OneBedroomZone3 1/4 | CoolingComponent:Heating Component:AirDistributionSystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingComponent	CoolingComponent	HVACFan-Furnace	AirDistributionSystem-Res	Setback	New	NA	1	1
OneBedroomZone3 2/4 | CoolingComponent:Heating Component:AirDistributionSystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingComponent	CoolingComponent	HVACFan-Furnace	AirDistributionSystem-Res	Setback	New	NA	1	1
OneBedroomZone3 3/4 | CoolingComponent:Heating Component:AirDistributionSystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingComponent	CoolingComponent	HVACFan-Furnace	AirDistributionSystem-Res	Setback	New	NA	1	1
OneBedroomZone3 4/4 | CoolingComponent:Heating Component:AirDistributionSystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingComponent	CoolingComponent	HVACFan-Furnace	AirDistributionSystem-Res	Setback	New	NA	1	1
TwoBedroomZone3 1/4 | CoolingComponent:Heating Component:AirDistributionSystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingComponent	CoolingComponent	HVACFan-Furnace	AirDistributionSystem-Res	Setback	New	NA	1	1
TwoBedroomZone3 2/4 | CoolingComponent:Heating Component:AirDistributionSystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingComponent	CoolingComponent	HVACFan-Furnace	AirDistributionSystem-Res	Setback	New	NA	1	1

Registration Number: Registration Date/Time: HERS Provider:

Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW   **Calculation Date/Time:** 2020-03-19T18:59:20-07:00

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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
TwoBedroomZone3 3/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
TwoBedroomZone3 4/4 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
ThreeBedroomZone3 1/2 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
ThreeBedroomZone3 2/2 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
StudioZone3 1/3 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1
StudioZone3 2/3 | CoolingComponent:Heating Component:AirDistributionS ystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingCom ponent	CoolingCom ponent	HVACFan-Furnace	AirDistributi onSystem-Res	Setback	New	NA	1	1

Registration Number: Registration Date/Time: HERS Provider:

Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW **Calculation Date/Time:** 2020-03-19T18:59:20-07:00

Calculation Description: TDSv30 V06R12 V06 R12 UGLASS15 NGAS PVSTD **Input File Name:** instance.ribd22

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
StudioZone3 3/3 | CoolingComponent:Heating Component:AirDistributionSystem-Res:HVACFan-Furnace:1:3	Heating and cooling system other	HeatingComponent	CoolingComponent	HVACFan-Furnace	AirDistributionSystem-Res	Setback	New	NA	1	1

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Heating Efficiency
HeatingComponent	Central gas furnace	36	AFUE-80

HVAC - COOLING UNIT TYPES

01	02	03	04	05	06	07	08
Name	System Type	Number of Units	Efficiency EER	Efficiency SEER	Zonally Controlled	Mulit-speed Compressor	HERS Verification
CoolingComponent	Central split AC	36	11.7	14	Not Zonal	Single Speed	CoolingComponent-hers-cool

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
HeatpumpSystem-Corridor1-hers-htpump	Required	350	Not Required	Not Required	Yes	No	No	No
HeatpumpSystem-BusinessCenter1-hers-htpump	Required	350	Not Required	Not Required	Yes	No	No	No

Registration Number: Registration Date/Time: HERS Provider:

Project Name: 2019 Prototype 39372ft2 Prop Mixed - In-Unit Heat Pump DHW

Calculation Date/Time: 2020-03-19T18:59:20-07:00

Calculation Description: TDSv30 V06R12 V06 R12 UGLASS15 NGAS PVSTD

Input File Name: instance.ribd22

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
HeatpumpSystem-FitnessCenter1-hers-htpump	Required	350	Not Required	Not Required	Yes	No	No	No
HeatpumpSystem-Laundry1-hers-htpump	Required	350	Not Required	Not Required	Yes	No	No	No
HeatpumpSystem-LeasingOffice1-hers-htpump	Required	350	Not Required	Not Required	Yes	No	No	No
HeatpumpSystem-Lobby1-hers-htpump	Required	350	Not Required	Not Required	Yes	No	No	No
HeatpumpSystem-Stairs-hers-htpump	Required	350	Not Required	Not Required	Yes	No	No	No
HeatpumpSystem-Corridor2-hers-htpump	Required	350	Not Required	Not Required	Yes	No	No	No
HeatpumpSystem-Corridor3-hers-htpump	Required	350	Not Required	Not Required	Yes	No	No	No

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target	Verified EER	Verified SEER	Verified Refrigerant Charge
CoolingComponent-hers-cool	Required	350	Not Required	Not Required	Required

Registration Number:

Registration Date/Time:

HERS Provider:

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HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
			Duct Ins. R-value		Duct Location		Surface Area				
Name	Type	Design Type	Supply	Return	Supply	Return	Supply	Return	Bypass Duct	Duct Leakage	HERS Verification
AirDistributionSystem-Res	Conditioned space-entirely	Non-Verified	R-4.2	R-4.2	Conditioned Zone	Conditioned Zone	n/a	n/a	No Bypass Duct	Sealed and Tested	AirDistributionSystem-Res-hers-dist
AirDistributionSystem-NonRes	Conditioned space-entirely	Non-Verified	R-4.2	R-4.2	Conditioned Zone	Conditioned Zone	n/a	n/a	No Bypass Duct	Sealed and Tested	AirDistributionSystem-NonRes-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08	09
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler	Low Leakage Ducts Entirely in Conditioned Space
AirDistributionSystem-Res-hers-dist	Yes	total leakage <= 12.0 or leakage to outdoors <= 6.0	Required	Not Required	Not Required	Credit not taken	Not Required	No
AirDistributionSystem-NonRes-hers-dist	Yes	total leakage <= 12.0 or leakage to outdoors <= 6.0	Required	Not Required	Not Required	Credit not taken	Not Required	No

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVACFan-HeatPump	HVAC Fan	0.58	HVACFan-HeatPump-hers-fan

Registration Number:

Registration Date/Time:

HERS Provider:

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HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	Name
HVACFan-Furnace	HVAC Fan	0.45	HVACFan-Furnace-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficacy (Watts/CFM)
HVACFan-HeatPump-hers-fan	Required	0.58
HVACFan-Furnace-hers-fan	Required	0.45

IAQ (INDOOR AIR QUALITY) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness (%)	IAQ Recovery Effectiveness - SREIAQ Recovery Effectiveness - SRE
OneBedroomZone1 1/4 fan 1/1 cnt 1/1	37	0.6	Balanced		n/a
OneBedroomZone1 2/4 fan 1/1 cnt 1/1	37	0.6	Balanced		n/a
OneBedroomZone1 3/4 fan 1/1 cnt 1/1	37	0.6	Balanced		n/a
OneBedroomZone1 4/4 fan 1/1 cnt 1/1	37	0.6	Balanced		n/a
TwoBedroomZone1 1/4 fan 1/1 cnt 1/1	54	0.6	Balanced		n/a
TwoBedroomZone1 2/4 fan 1/1 cnt 1/1	54	0.6	Balanced		n/a
TwoBedroomZone1 3/4 fan 1/1 cnt 1/1	54	0.6	Balanced		n/a
TwoBedroomZone1 4/4 fan 1/1 cnt 1/1	54	0.6	Balanced		n/a

Registration Number:

Registration Date/Time:

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IAQ (INDOOR AIR QUALITY) FANS					
01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness (%)	IAQ Recovery Effectiveness - SREIAQ Recovery Effectiveness - SRE
ThreeBedroomZone1 1/2 fan 1/1 cnt 1/1	72	0.6	Balanced		n/a
ThreeBedroomZone1 2/2 fan 1/1 cnt 1/1	72	0.6	Balanced		n/a
OneBedroomZone2 1/4 fan 1/1 cnt 1/1	37	0.6	Balanced		n/a
OneBedroomZone2 2/4 fan 1/1 cnt 1/1	37	0.6	Balanced		n/a
OneBedroomZone2 3/4 fan 1/1 cnt 1/1	37	0.6	Balanced		n/a
OneBedroomZone2 4/4 fan 1/1 cnt 1/1	37	0.6	Balanced		n/a
TwoBedroomZone2 1/4 fan 1/1 cnt 1/1	54	0.6	Balanced		n/a
TwoBedroomZone2 2/4 fan 1/1 cnt 1/1	54	0.6	Balanced		n/a
TwoBedroomZone2 3/4 fan 1/1 cnt 1/1	54	0.6	Balanced		n/a
TwoBedroomZone2 4/4 fan 1/1 cnt 1/1	54	0.6	Balanced		n/a
ThreeBedroomZone2 1/2 fan 1/1 cnt 1/1	72	0.6	Balanced		n/a
ThreeBedroomZone2 2/2 fan 1/1 cnt 1/1	72	0.6	Balanced		n/a
StudioZone2 1/3 fan 1/1 cnt 1/1	31	0.6	Balanced		n/a
StudioZone2 2/3 fan 1/1 cnt 1/1	31	0.6	Balanced		n/a
StudioZone2 3/3 fan 1/1 cnt 1/1	31	0.6	Balanced		n/a

Registration Number:

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IAQ (INDOOR AIR QUALITY) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness (%)	IAQ Recovery Effectiveness - SREIAQ Recovery Effectiveness - SRE
OneBedroomZone3 1/4 fan 1/1 cnt 1/1	37	0.6	Balanced		n/a
OneBedroomZone3 2/4 fan 1/1 cnt 1/1	37	0.6	Balanced		n/a
OneBedroomZone3 3/4 fan 1/1 cnt 1/1	37	0.6	Balanced		n/a
OneBedroomZone3 4/4 fan 1/1 cnt 1/1	37	0.6	Balanced		n/a
TwoBedroomZone3 1/4 fan 1/1 cnt 1/1	54	0.6	Balanced		n/a
TwoBedroomZone3 2/4 fan 1/1 cnt 1/1	54	0.6	Balanced		n/a
TwoBedroomZone3 3/4 fan 1/1 cnt 1/1	54	0.6	Balanced		n/a
TwoBedroomZone3 4/4 fan 1/1 cnt 1/1	54	0.6	Balanced		n/a
ThreeBedroomZone3 1/2 fan 1/1 cnt 1/1	72	0.6	Balanced		n/a
ThreeBedroomZone3 2/2 fan 1/1 cnt 1/1	72	0.6	Balanced		n/a
StudioZone3 1/3 fan 1/1 cnt 1/1	31	0.6	Balanced		n/a
StudioZone3 2/3 fan 1/1 cnt 1/1	31	0.6	Balanced		n/a
StudioZone3 3/3 fan 1/1 cnt 1/1	31	0.6	Balanced		n/a

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CERTIFICATE OF COMPLIANCE

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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:	Documentation Author Signature:
Company:	Signature Date:
Address:	CEA/ HERS Certification Identification (If applicable):
City/State/Zip:	Phone:

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:	Responsible Designer Signature:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone:

Not useable for compliance

Registration Number:

Registration Date/Time:

HERS Provider:

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