CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Building 500
Calculation Description: Title 24 Analysis
Calculation Date/Time: 12:29, Tue, Jul 24, 2018
Input File Name: Lennar_Auburn Grove Building 500-315.ribd16x

GENERAL INFORMATION					
01	Project Name	Building 500			
02	Calculation Description	Title 24 Analysis			
03	Project Location	Auburn Grove			
04	City	Livermore	05	Standards Version	Compliance 2017
06	Zip Code		07	Compliance Manager Version	BEMCmpMgr 2016.3.0 (1016 SP2)
08	Climate Zone	CZ12	09	Software Version	EnergyPro 7.2
10	Building Type	Multifamily	11	Front Orientation (deg/Cardinal)	315
12	Project Scope	Newly Constructed	13	Number of Dwelling Units	7
14	Total Cond. Floor Area (ft^2)	14226	15	Number of Zones	1
16	Slab Area (ft^2)	2674	17	Number of Stories	3
18	Addition Cond. Floor Area(ft^2)	n/a	19	Natural Gas Available	Yes
20	Addition Slab Area (ft^2)	n/a	21	Glazing Percentage (%)	11.2%

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				
04	05	06	07	08
Energy Use ($kTDV/ft^2$-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	14.12	14.73	-0.61	-4.3%
Space Cooling	18.20	16.82	1.38	7.6%
IAQ Ventilation	2.27	2.27	0.00	0.0%
Water Heating	10.91	9.72	1.19	10.9%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	45.50	43.54	1.96	4.3%

ENERGY DESIGN RATING

Energy Design Rating (EDR) is an alternate way to express the energy performance of a building using a scoring system where 100 represents the energy performance of the Residential Energy Services (RESNET) reference home characterization of the 2006 International Energy Conservation Code (IECC) with California modeling assumptions. A score of zero represents the energy performance of a building that combines high levels of energy efficiency with renewable generation to"zero out" its TDV energy. Because EDR includes consideration of components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics), it is not used to show compliance with Part 6 but may instead be used by local jurisdictions pursuing local ordinances under Title 24, Part 11 (CALGreen).
As a Standard Design building under the 2016 Building Energy Efficiency Standards is significantly more efficient than the baseline EDR building, the EDR of the Standard Design building is provided for Information. Similarly, the EDR score of the Proposed Design is provided separately from the EDR value of installed PV so that the effects of efficiency and renewable energy can both be seen

EDR of Standard Efficiency	EDR of Proposed Efficiency	EDR Value of Proposed PV + Battery	Final Proposed EDR
56.4	55.1	0.0	55.1

☐	**Design meets Tier 1 requirement of 15% or greater code compliance margin (CALGreen A4.203.1.2.1) and QII verification prerequisite.**
☐	**Design meets Tier 2 requirement of 30% or greater code compliance margin (CALGreen A4.203.1.2.2) and QII verification prerequisite.**
☐	**Design meets Zero Net Energy (ZNE) Design Designation requirement for Multifamily in climate zone CZ12 (Sacramento) (CALGreen A4.203.1.2.3) including on-site photovoltaic (PV) renewable energy generation sufficient to achieve a Final Energy Design Rating (EDR) of zero or less. The PV System must be verified.**

Notes:
- **Excess PV Generation EDR Credit: Bypassing PV size limit may violate Net Energy Metering (NEM) rules**

REQUIRED SPECIAL FEATURES

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

- **Non-standard roof reflectance**
- **Ceiling has high level of insulation**
- **Insulation below roof deck**

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 components tables below.

Building-level Verifications:
- **High quality insulation installation (QII)**
- **IAQ mechanical ventilation**

Cooling System Verifications:
- **-- None --**

HVAC Distribution System Verifications:
- **Duct Sealing**
- **Low-leakage Air Handling Unit**

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
Building 500	14226	7	26	1	0	7

ZONE INFORMATION

01	02	03	04	05
Zone Name	Zone Type	Zone Floor Area (ft^2)	Avg. Ceiling Height	Number of Dwelling Units
Zone 1	Conditioned	14226	9	7

DWELLING UNIT INFORMATION

01	02	03
Dwelling Unit Name	Dwelling Unit Type	Zone
DDU-1 Unit 3-(1/1)	DU-1 Unit 3	Zone 1
DDU-2 Unit 2-(1/2)	DU-2 Unit 2	Zone 1
DDU-2 Unit 2-(2/2)	DU-2 Unit 2	Zone 1
DDU-3 Unit 1-(1/2)	DU-3 Unit 1	Zone 1
DDU-3 Unit 1-(2/2)	DU-3 Unit 1	Zone 1
DDU-4 Unit 3Y-(1/1)	DU-4 Unit 3Y	Zone 1
DDU-5 Unit 3X-(1/1)	DU-5 Unit 3X	Zone 1

DWELLING UNIT TYPES						
01	02	03	04	05	06	07
Name	CFA (ft^2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
DU-1 Unit 3	2098	4	1	DDU-1 Unit 3 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-2 Unit 2	2128	4	2	DDU-2 Unit 2 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3 DDU-2 Unit 2 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-3 Unit 1	1844	3	2	DDU-3 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3 DDU-3 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-4 Unit 3Y	2042	4	1	DDU-4 Unit 3Y | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-5 Unit 3X	2142	4	1	DDU-5 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window & Door Area (ft^2)	Tilt (deg)
Front Wall	Zone 1	R-15 Wall	315	Front	1273.1	361	90
Front 2x6 Wall	Zone 1	R-21 Wall	315	Front	91.9	0	90
Left Wall	Zone 1	R-15 Wall	45	Left	228.4	41	90
Rear Wall	Zone 1	R-15 Wall	135	Back	27.3	0	90
Right Wall	Zone 1	R-15 Wall	225	Right	232	12.3	90
Front Wall 2	Zone 1	R-15 Wall	315	Front	1001	297	90
Front 2x6 Wall 2	Zone 1	R-21 Wall	315	Front	382.2	144	90
Left Wall 2	Zone 1	R-15 Wall	45	Left	511.5	54	90
Left 2x6 Wall	Zone 1	R-21 Wall	45	Left	119.2	11	90
Rear Wall 2	Zone 1	R-15 Wall	135	Back	1269.5	196	90
Rear 2x6 Wall	Zone 1	R-21 Wall	315	Front	113.8	24	90
Right Wall 2	Zone 1	R-15 Wall	225	Right	511.5	60.5	90
Right 2x6 Wall	Zone 1	R-21 Wall	225	Right	119.2	13.5	90
Front Wall 3	Zone 1	R-15 Wall	315	Front	1310.4	273	90
Front 2x6 Wall 3	Zone 1	R-21 Wall	315	Front	72.8	16	90
Left Wall 3	Zone 1	R-15 Wall	45	Left	406	16	90
Left 2x6 Wall 2	Zone 1	R-21 Wall	45	Left	108.3	21	90
Rear Wall 3	Zone 1	R-15 Wall	135	Back	995	186	90
Rear 2x6 Wall 2	Zone 1	R-21 Wall	135	Back	388.2	0	90
Right Wall 3	Zone 1	R-15 Wall	225	Right	406	22	90
Right 2x6 Wall 2	Zone 1	R-21 Wall	225	Right	108.3	15	90
Left Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	127.4	0	n/a
Rear Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	1186.6	124.4	n/a
Rear 2x6 Interior Surfac	Zone 1>>__Garage__	Garage R-21 Wall	n/a	n/a	151.1	0	n/a
Right Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	127.4	0	n/a
Roof	Zone 1	R-49 Roof Attic+R-15	n/a	n/a	5941	n/a	n/a
Interior Surface	Zone 1>>__Garage__	R-19 Floor No Crawlspace	n/a	n/a	3267	n/a	n/a
Interior Surface 2	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	2661	n/a	n/a
Interior Surface 3	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	5662	n/a	n/a
Front Wall 4	__Garage__	R-0 Wall	315	Front	45.5	0	90

Left Wall 4	__Garage__	R-0 Wall	45	Left	187.5	0	90
Rear Wall 4	__Garage__	R-0 Wall	135	Back	1384.1	784	90
Right Wall 4	__Garage__	R-0 Wall	225	Right	186.6	2.3	90

ATTIC

01	02	03	04	05	06	07	08
Name	**Construction**	**Type**	**Roof Rise**	**Roof Reflectance**	**Roof Emittance**	**Radiant Barrier**	**Cool Roof**
Attic Zone 1	Attic RoofZone 1	Ventilated	5	0.15	0.8	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	**Type**	**Surface (Orientation-Azimuth)**	**Width (ft)**	**Height (ft)**	**Multiplier**	**Area (ft^2)**	**U-factor**	**SHGC**	**Exterior Shading**
Window	Window	Front Wall (Front-315)	----	----	1	217.0	0.30	0.23	Insect Screen (default)
Window 2	Window	Left Wall (Left-45)	----	----	1	17.0	0.30	0.23	Insect Screen (default)
Window 3	Window	Right Wall (Right-225)	----	----	1	12.3	0.30	0.23	Insect Screen (default)
Window 4	Window	Front Wall 2 (Front-315)	----	----	1	297.0	0.30	0.23	Insect Screen (default)
Window 5	Window	Front 2x6 Wall 2 (Front-315)	----	----	1	144.0	0.30	0.23	Insect Screen (default)
Window 6	Window	Left Wall 2 (Left-45)	----	----	1	54.0	0.30	0.23	Insect Screen (default)
Window 7	Window	Left 2x6 Wall (Left-45)	----	----	1	11.0	0.30	0.23	Insect Screen (default)
Window 8	Window	Rear Wall 2 (Back-135)	----	----	1	196.0	0.30	0.23	Insect Screen (default)
Window 9	Window	Rear 2x6 Wall (Front-315)	----	----	1	24.0	0.30	0.23	Insect Screen (default)
Window 10	Window	Right Wall 2 (Right-225)	----	----	1	60.5	0.30	0.23	Insect Screen (default)
Window 11	Window	Right 2x6 Wall (Right-225)	----	----	1	13.5	0.30	0.23	Insect Screen (default)
Window 12	Window	Front Wall 3 (Front-315)	----	----	1	273.0	0.30	0.23	Insect Screen (default)
Window 13	Window	Front 2x6 Wall 3 (Front-315)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 14	Window	Left Wall 3 (Left-45)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 15	Window	Left 2x6 Wall 2 (Left-45)	----	----	1	21.0	0.30	0.23	Insect Screen (default)
Window 16	Window	Rear Wall 3 (Back-135)	----	----	1	186.0	0.30	0.23	Insect Screen (default)
Window 17	Window	Right Wall 3 (Right-225)	----	----	1	22.0	0.30	0.23	Insect Screen (default)
Window 18	Window	Right 2x6 Wall 2 (Right-225)	----	----	1	15.0	0.30	0.23	Insect Screen (default)
Window 19	Window	Right Wall 4 (Right-225)	----	----	1	2.3	0.30	0.23	Insect Screen (default)

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Door	Front Wall	144.0	0.50
Door 2	Left Wall	24.0	0.50
Door 3	Rear Interior Surface	124.4	0.50
Door 4	Rear Wall 4	784.0	0.50

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	none	0.347	• *Inside Finish: Gypsum Board* • *Cavity / Frame: no insul. / 2x6* • *Exterior Finish: 3 Coat Stucco*
Attic RoofZone 1	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 15	0.065	• *Around Roof Joists: R-2.0 insul.* • *Cavity / Frame: R-13.0 / 2x4 Top Chrd* • *Roof Deck: Wood Siding/sheathing/decking* • *Tile Gap: present* • *Roofing: 10 PSF (RoofTile)*
R-15 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 13	0.087	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-13 / 2x6* • *Exterior Finish: 3 Coat Stucco*
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.069	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x6* • *Exterior Finish: 3 Coat Stucco*
Garage R-15 Wall	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 13	0.081	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-13 / 2x6* • *Other Side Finish: Gypsum Board*
Garage R-21 Wall	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.064	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x6* • *Other Side Finish: Gypsum Board*
R-19 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x6 @ 16 in. O.C.	R 19 in 5-1/2 in. cavity (R-18)	0.049	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6* • *Ceiling Below Finish: Gypsum Board*
R-49 Roof Attic+R-15	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O.C.	R 49	0.020	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-39.9 insul.*

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value & Depth	Carpeted Fraction	Heated
Slab-on-Grade	Zone 1	2674	204	None	0.8	No
Slab-on-Grade 2	__Garage__	3267	220	None	0	No

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
Name	System Type	Number of Systems in Building	Multi-Family Distribution Type	Water Heater	Number of Water Heaters/System	Solar Fraction (%)
DHW Sys 1	Standard	7	Multi-family: No loops or recirc pump	DHW Heater 1 (1)	1	0

WATER HEATING SYSTEMS

01	02	03	04	05	06
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)
DHW Sys 1			DHW Heater 1 (1)	1	.0%

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Factor / Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model	Tank Location or Ambient Condition
DHW Heater 1	Gas	Small Instantaneous	1	0	0.92 EF	199,000 Btu/hr	0	n/a	n/a	n/a	n/a

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
DDU-1 Unit 3 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-2 Unit 2 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-2 Unit 2 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-3 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-3 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-4 Unit 3Y | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-5 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	CntrlFurnace - Fuel-fired central furnace	7	92 AFUE

HVAC - COOLING UNIT TYPES

01	02	03	04	05	06	07	08
Name	System Type	Number of Units	Efficiency EER	Efficiency SEER	Zonally Controlled	Multi-speed Compressor	HERS Verification
Cooling Component 1	SplitAirCond - Split air conditioning system	7	13	16	No	No	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target (CFM)	Verified EER	Verified SEER	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Required	Required	Required

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07
Name	Type	Duct Leakage	Insulation R-value	Duct Location	Bypass Duct	HERS Verification
Air Distribution System 1	DuctsAttic	Specified Lower Leakage Target	6	Attic	None	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	Required

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficiency (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.58

IAQ (Indoor Air Quality) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
DDU-1 Unit 3 1/1	100	0.25	Default	0	Required
DDU-2 Unit 2 1/2	101	0.25	Default	0	Required
DDU-3 Unit 1 1/2	85	0.25	Default	0	Required
DDU-4 Unit 3Y 1/1	99	0.25	Default	0	Required
DDU-5 Unit 3X 1/1	102	0.25	Default	0	Required

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Cristela Lujan	Documentation Author Signature: Cristela Lujan
Company: Energy Inspectors	Signature Date: 2018-07-24 12:57:20
Address: 2570 South Miller Lane	CEA/HERS Certification Identification (If applicable): NA
City/State/Zip: Las Vegas, NV 89117	Phone: 702-365-8080

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: Mitu Walia	Responsible Designer Signature: Mitu Walia
Company: Lennar Homes - San Ramon	Date Signed: 2018-07-24 14:04:17
Address: 2603 camino ramon Suite 525	License: NA
City/State/Zip: San Ramon, CA 94583	Phone: 925-327-8334

Digitally signed by CalCERTS. 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.

Easy to Verify at CalCERTS.com

GENERAL INFORMATION					
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02	Calculation Description	Title 24 Analysis			
03	Project Location	Auburn Grove			
04	City	Livermore	05	Standards Version	Compliance 2017
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IAQ Ventilation	2.27	2.27	0.00	0.0%
Water Heating	10.84	9.66	1.18	10.9%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	45.25	42.86	2.39	5.3%

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

- **Non-standard roof reflectance**
- **Ceiling has high level of insulation**
- **Insulation below roof deck**

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 components tables below.

Building-level Verifications:
- **High quality insulation installation (QII)**
- **IAQ mechanical ventilation**

Cooling System Verifications:
- **-- None --**

HVAC Distribution System Verifications:
- **Duct Sealing**
- **Low-leakage Air Handling Unit**

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
Building 500	14326	7	26	1	0	7

ZONE INFORMATION

01	02	03	04	05
Zone Name	Zone Type	Zone Floor Area (ft^2)	Avg. Ceiling Height	Number of Dwelling Units
Zone 1	Conditioned	14326	9	7

DWELLING UNIT INFORMATION

01	02	03
Dwelling Unit Name	Dwelling Unit Type	Zone
DDU-1 Unit 3-(1/1)	DU-1 Unit 3	Zone 1
DDU-2 Unit 2-(1/2)	DU-2 Unit 2	Zone 1
DDU-2 Unit 2-(2/2)	DU-2 Unit 2	Zone 1
DDU-3 Unit 1-(1/2)	DU-3 Unit 1	Zone 1
DDU-3 Unit 1-(2/2)	DU-3 Unit 1	Zone 1
DDU-4 Unit 3Y-(1/1)	DU-4 Unit 3Y	Zone 1
DDU-5 Unit 3X-(1/1)	DU-5 Unit 3X	Zone 1

DWELLING UNIT TYPES						
01	02	03	04	05	06	07
Name	CFA (ft^2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
DU-1 Unit 3	2098	4	1	DDU-1 Unit 3 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-2 Unit 2	2128	4	2	DDU-2 Unit 2 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3 DDU-2 Unit 2 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-3 Unit 1	1844	3	2	DDU-3 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3 DDU-3 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-4 Unit 3Y	2142	4	1	DDU-4 Unit 3Y | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-5 Unit 3X	2142	4	1	DDU-5 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window & Door Area (ft^2)	Tilt (deg)
Front Wall	Zone 1	R-15 Wall	135	Front	1273.1	361	90
Front 2x6 Wall	Zone 1	R-21 Wall	135	Front	91.9	0	90
Left Wall	Zone 1	R-15 Wall	225	Left	228.4	41	90
Rear Wall	Zone 1	R-15 Wall	315	Back	27.3	0	90
Right Wall	Zone 1	R-15 Wall	45	Right	232	12.3	90
Front Wall 2	Zone 1	R-15 Wall	135	Front	1001	297	90
Front 2x6 Wall 2	Zone 1	R-21 Wall	135	Front	382.2	144	90
Left Wall 2	Zone 1	R-15 Wall	225	Left	511.5	54	90
Left 2x6 Wall	Zone 1	R-21 Wall	225	Left	119.2	11	90
Rear Wall 2	Zone 1	R-15 Wall	315	Back	1269.5	196	90
Rear 2x6 Wall	Zone 1	R-21 Wall	135	Front	113.8	24	90
Right Wall 2	Zone 1	R-15 Wall	45	Right	511.5	60.5	90
Right 2x6 Wall	Zone 1	R-21 Wall	45	Right	119.2	13.5	90
Front Wall 3	Zone 1	R-15 Wall	135	Front	1310.4	273	90
Front 2x6 Wall 3	Zone 1	R-21 Wall	135	Front	72.8	16	90
Left Wall 3	Zone 1	R-15 Wall	225	Left	406	16	90
Left 2x6 Wall 2	Zone 1	R-21 Wall	225	Left	108.3	21	90
Rear Wall 3	Zone 1	R-15 Wall	315	Back	995	186	90
Rear 2x6 Wall 2	Zone 1	R-21 Wall	315	Back	388.2	0	90
Right Wall 3	Zone 1	R-15 Wall	45	Right	406	22	90
Right 2x6 Wall 2	Zone 1	R-21 Wall	45	Right	108.3	15	90
Left Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	127.4	0	n/a
Rear Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	1186.6	124.4	n/a
Rear 2x6 Interior Surfac	Zone 1>>__Garage__	Garage R-21 Wall	n/a	n/a	151.1	0	n/a
Right Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	127.4	0	n/a
Roof	Zone 1	R-49 Roof Attic+R-15	n/a	n/a	5941	n/a	n/a
Interior Surface	Zone 1>>__Garage__	R-19 Floor No Crawlspace	n/a	n/a	3267	n/a	n/a
Interior Surface 2	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	2661	n/a	n/a
Interior Surface 3	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	5662	n/a	n/a
Front Wall 4	__Garage__	R-0 Wall	135	Front	45.5	0	90

Left Wall 4	__Garage__	R-0 Wall	225	Left	187.5	0	90
Rear Wall 4	__Garage__	R-0 Wall	315	Back	1384.1	784	90
Right Wall 4	__Garage__	R-0 Wall	45	Right	186.6	2.3	90

ATTIC

01	02	03	04	05	06	07	08
Name	**Construction**	**Type**	**Roof Rise**	**Roof Reflectance**	**Roof Emittance**	**Radiant Barrier**	**Cool Roof**
Attic Zone 1	Attic RoofZone 1	Ventilated	5	0.15	0.8	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	**Type**	**Surface (Orientation-Azimuth)**	**Width (ft)**	**Height (ft)**	**Multiplier**	**Area (ft^2)**	**U-factor**	**SHGC**	**Exterior Shading**
Window	Window	Front Wall (Front-135)	----	----	1	217.0	0.30	0.23	Insect Screen (default)
Window 2	Window	Left Wall (Left-225)	----	----	1	17.0	0.30	0.23	Insect Screen (default)
Window 3	Window	Right Wall (Right-45)	----	----	1	12.3	0.30	0.23	Insect Screen (default)
Window 4	Window	Front Wall 2 (Front-135)	----	----	1	297.0	0.30	0.23	Insect Screen (default)
Window 5	Window	Front 2x6 Wall 2 (Front-135)	----	----	1	144.0	0.30	0.23	Insect Screen (default)
Window 6	Window	Left Wall 2 (Left-225)	----	----	1	54.0	0.30	0.23	Insect Screen (default)
Window 7	Window	Left 2x6 Wall (Left-225)	----	----	1	11.0	0.30	0.23	Insect Screen (default)
Window 8	Window	Rear Wall 2 (Back-315)	----	----	1	196.0	0.30	0.23	Insect Screen (default)
Window 9	Window	Rear 2x6 Wall (Front-135)	----	----	1	24.0	0.30	0.23	Insect Screen (default)
Window 10	Window	Right Wall 2 (Right-45)	----	----	1	60.5	0.30	0.23	Insect Screen (default)
Window 11	Window	Right 2x6 Wall (Right-45)	----	----	1	13.5	0.30	0.23	Insect Screen (default)
Window 12	Window	Front Wall 3 (Front-135)	----	----	1	273.0	0.30	0.23	Insect Screen (default)
Window 13	Window	Front 2x6 Wall 3 (Front-135)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 14	Window	Left Wall 3 (Left-225)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 15	Window	Left 2x6 Wall 2 (Left-225)	----	----	1	21.0	0.30	0.23	Insect Screen (default)
Window 16	Window	Rear Wall 3 (Back-315)	----	----	1	186.0	0.30	0.23	Insect Screen (default)
Window 17	Window	Right Wall 3 (Right-45)	----	----	1	22.0	0.30	0.23	Insect Screen (default)
Window 18	Window	Right 2x6 Wall 2 (Right-45)	----	----	1	15.0	0.30	0.23	Insect Screen (default)
Window 19	Window	Right Wall 4 (Right-45)	----	----	1	2.3	0.30	0.23	Insect Screen (default)

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Door	Front Wall	144.0	0.50
Door 2	Left Wall	24.0	0.50
Door 3	Rear Interior Surface	124.4	0.50
Door 4	Rear Wall 4	784.0	0.50

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	none	0.347	• *Inside Finish: Gypsum Board* • *Cavity / Frame: no insul. / 2x6* • *Exterior Finish: 3 Coat Stucco*
Attic RoofZone 1	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 15	0.065	• *Around Roof Joists: R-2.0 insul.* • *Cavity / Frame: R-13.0 / 2x4 Top Chrd* • *Roof Deck: Wood Siding/sheathing/decking* • *Tile Gap: present* • *Roofing: 10 PSF (RoofTile)*
R-15 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 13	0.087	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-13 / 2x6* • *Exterior Finish: 3 Coat Stucco*
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.069	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x6* • *Exterior Finish: 3 Coat Stucco*
Garage R-15 Wall	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 13	0.081	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-13 / 2x6* • *Other Side Finish: Gypsum Board*
Garage R-21 Wall	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.064	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x6* • *Other Side Finish: Gypsum Board*
R-19 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x6 @ 16 in. O.C.	R 19 in 5-1/2 in. cavity (R-18)	0.049	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6* • *Ceiling Below Finish: Gypsum Board*
R-49 Roof Attic+R-15	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O.C.	R 49	0.020	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-39.9 insul.*

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value & Depth	Carpeted Fraction	Heated
Slab-on-Grade	Zone 1	2674	204	None	0.8	No
Slab-on-Grade 2	__Garage__	3267	220	None	0	No

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
Name	System Type	Number of Systems in Building	Multi-Family Distribution Type	Water Heater	Number of Water Heaters/System	Solar Fraction (%)
DHW Sys 1	Standard	7	Multi-family: No loops or recirc pump	DHW Heater 1 (1)	1	0

WATER HEATING SYSTEMS

01	02	03	04	05	06
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)
DHW Sys 1			DHW Heater 1 (1)	1	.0%

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Factor / Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model	Tank Location or Ambient Condition
DHW Heater 1	Gas	Small Instantaneous	1	0	0.92 EF	199,000 Btu/hr	0	n/a	n/a	n/a	n/a

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
DDU-1 Unit 3 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-2 Unit 2 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-2 Unit 2 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-3 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-3 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-4 Unit 3Y | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-5 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	CntrlFurnace - Fuel-fired central furnace	7	92 AFUE

HVAC - COOLING UNIT TYPES

01	02	03	04	05	06	07	08
Name	System Type	Number of Units	Efficiency EER	Efficiency SEER	Zonally Controlled	Multi-speed Compressor	HERS Verification
Cooling Component 1	SplitAirCond - Split air conditioning system	7	13	16	No	No	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target (CFM)	Verified EER	Verified SEER	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Required	Required	Required

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07
Name	Type	Duct Leakage	Insulation R-value	Duct Location	Bypass Duct	HERS Verification
Air Distribution System 1	DuctsAttic	Specified Lower Leakage Target	6	Attic	None	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	Required

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficiency (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.58

IAQ (Indoor Air Quality) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
DDU-1 Unit 3 1/1	100	0.25	Default	0	Required
DDU-2 Unit 2 1/2	101	0.25	Default	0	Required
DDU-3 Unit 1 1/2	85	0.25	Default	0	Required
DDU-4 Unit 3Y 1/1	102	0.25	Default	0	Required
DDU-5 Unit 3X 1/1	102	0.25	Default	0	Required

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Cristela Lujan	Documentation Author Signature: Cristela Lujan
Company: Energy Inspectors	Signature Date: 2018-07-24 12:56:12
Address: 2570 South Miller Lane	CEA/HERS Certification Identification (If applicable): NA
City/State/Zip: Las Vegas, NV 89117	Phone: 702-365-8080

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: Mitu Walia	Responsible Designer Signature: Mitu Walia
Company: Lennar Homes - San Ramon	Date Signed: 2018-07-24 14:05:19
Address: 2603 camino ramon Suite 525	License: N/A
City/State/Zip: San Ramon, CA 94583	Phone: 925-327-8334

Digitally signed by CalCERTS. 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.

Easy to Verify at CalCERTS.com

Project Name: Building 100
Calculation Date/Time: 11:56, Tue, Jul 24, 2018
Calculation Description: Title 24 Analysis
Input File Name: Lennar_Auburn Grove Building 100 & 100R-45.ribd16x

GENERAL INFORMATION					
01	Project Name	Building 100			
02	Calculation Description	Title 24 Analysis			
03	Project Location	Auburn Grove			
04	City	Livermore	05	Standards Version	Compliance 2017
06	Zip Code		07	Compliance Manager Version	BEMCmpMgr 2016.3.0 (1016 SP2)
08	Climate Zone	CZ12	09	Software Version	EnergyPro 7.2
10	Building Type	Multifamily	11	Front Orientation (deg/Cardinal)	45
12	Project Scope	Newly Constructed	13	Number of Dwelling Units	4
14	Total Cond. Floor Area (ft^2)	6771	15	Number of Zones	1
16	Slab Area (ft^2)	2430	17	Number of Stories	2
18	Addition Cond. Floor Area(ft^2)	n/a	19	Natural Gas Available	Yes
20	Addition Slab Area (ft^2)	n/a	21	Glazing Percentage (%)	13.6%

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				
04	05	06	07	08
Energy Use ($kTDV/ft^2$-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	14.75	14.88	-0.13	-0.9%
Space Cooling	20.39	20.62	-0.23	-1.1%
IAQ Ventilation	2.40	2.40	0.00	0.0%
Water Heating	12.33	10.99	1.34	10.9%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	**49.87**	**48.89**	**0.98**	**2.0%**

ENERGY DESIGN RATING

Energy Design Rating (EDR) is an alternate way to express the energy performance of a building using a scoring system where 100 represents the energy performance of the Residential Energy Services (RESNET) reference home characterization of the 2006 International Energy Conservation Code (IECC) with California modeling assumptions. A score of zero represents the energy performance of a building that combines high levels of energy efficiency with renewable generation to"zero out" its TDV energy. Because EDR includes consideration of components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics), it is not used to show compliance with Part 6 but may instead be used by local jurisdictions pursuing local ordinances under Title 24, Part 11 (CALGreen).
As a Standard Design building under the 2016 Building Energy Efficiency Standards is significantly more efficient than the baseline EDR building, the EDR of the Standard Design building is provided for Information. Similarly, the EDR score of the Proposed Design is provided separately from the EDR value of installed PV so that the effects of efficiency and renewable energy can both be seen

EDR of Standard Efficiency	EDR of Proposed Efficiency	EDR Value of Proposed PV + Battery	Final Proposed EDR
58.0	57.4	0.0	57.4

☐	**Design meets Tier 1 requirement of 15% or greater code compliance margin (CALGreen A4.203.1.2.1) and QII verification prerequisite.**
☐	**Design meets Tier 2 requirement of 30% or greater code compliance margin (CALGreen A4.203.1.2.2) and QII verification prerequisite.**
☐	**Design meets Zero Net Energy (ZNE) Design Designation requirement for Multifamily in climate zone CZ12 (Sacramento) (CALGreen A4.203.1.2.3) including on-site photovoltaic (PV) renewable energy generation sufficient to achieve a Final Energy Design Rating (EDR) of zero or less. The PV System must be verified.**

Notes:
- **Excess PV Generation EDR Credit: Bypassing PV size limit may violate Net Energy Metering (NEM) rules**

REQUIRED SPECIAL FEATURES

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

- **Non-standard roof reflectance**
- **Ceiling has high level of insulation**
- **Insulation below roof deck**
- **No cooling system included**

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 components tables below.

Building-level Verifications:
- **High quality insulation installation (QII)**
- **IAQ mechanical ventilation**

Cooling System Verifications:
- **-- None --**

HVAC Distribution System Verifications:
- **Duct Sealing**
- **Low-leakage Air Handling Unit**

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
Building 100	6771	4	14	1	0	4

ZONE INFORMATION

01	02	03	04	05
Zone Name	Zone Type	Zone Floor Area (ft^2)	Avg. Ceiling Height	Number of Dwelling Units
Zone 1	Conditioned	6771	9	4

DWELLING UNIT INFORMATION

01	02	03
Dwelling Unit Name	Dwelling Unit Type	Zone
DDU-1 Unit 5R-(1/1)	DU-1 Unit 5R	Zone 1
DDU-2 Unit 5X-(1/1)	DU-2 Unit 5X	Zone 1
DDU-3 Unit 4-(1/1)	DU-3 Unit 4	Zone 1
DDU-4 Unit 4X-(1/1)	DU-4 Unit 4X	Zone 1

DWELLING UNIT TYPES

01	02	03	04	05	06	07
Name	CFA (ft^2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
DU-1 Unit 5R	1811	4	1	DDU-1 Unit 5R | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-2 Unit 5X	1811	4	1	DDU-2 Unit 5X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-3 Unit 4	1569	3	1	DDU-3 Unit 4 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-4 Unit 4X	1580	3	1	DDU-4 Unit 4X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window & Door Area (ft^2)	Tilt (deg)
Front Wall	Zone 1	R-15	45	Front	844	313	90
Left Wall	Zone 1	R-15	135	Left	249.5	66	90
Rear Wall	Zone 1	R-15	225	Back	27.3	0	90
Right Wall	Zone 1	R-15	315	Right	249.5	66	90
Front Wall 2	Zone 1	R-15	45	Front	851.9	178.5	90
Left Wall 2	Zone 1	R-15	135	Left	605.2	91	90
Rear Wall 2	Zone 1	R-15	225	Back	853.9	210	90
Right Wall 2	Zone 1	R-15	315	Right	605.2	91	90
Left Interior Surface	Zone 1>>__Garage__	Garage R-15	n/a	n/a	48.5	0	n/a
Rear Interior Surface	Zone 1>>__Garage__	Garage R-15	n/a	n/a	815.9	71.1	n/a
Right Interior Surface	Zone 1>>__Garage__	Garage R-15	n/a	n/a	48.5	0	n/a
Roof	Zone 1	R-49 Roof Attic + R-15	n/a	n/a	4234	n/a	n/a
Interior Surface	Zone 1>>__Garage__	R-19 Frame Floor	n/a	n/a	1804	n/a	n/a
Left Wall 3	__Garage__	R-0 Wall	135	Left	186.6	0	90
Rear Wall 3	__Garage__	R-0 Wall	225	Back	816.7	512	90
Right Wall 3	__Garage__	R-0 Wall	315	Right	186.8	0	90

ATTIC

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic Zone 1	Attic RoofZone 1	Ventilated	5	0.15	0.8	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	Type	Surface (Orientation-Azimuth)	Width (ft)	Height (ft)	Multiplier	Area (ft^2)	U-factor	SHGC	Exterior Shading
Window	Window	Front Wall (Front-45)	----	----	1	217.0	0.30	0.23	Insect Screen (default)
Window 2	Window	Left Wall (Left-135)	----	----	1	66.0	0.30	0.23	Insect Screen (default)
Window 3	Window	Right Wall (Right-315)	----	----	1	66.0	0.30	0.23	Insect Screen (default)
Window 4	Window	Front Wall 2 (Front-45)	----	----	1	178.5	0.30	0.23	Insect Screen (default)
Window 5	Window	Left Wall 2 (Left-135)	----	----	1	91.0	0.30	0.23	Insect Screen (default)
Window 6	Window	Rear Wall 2 (Back-225)	----	----	1	210.0	0.30	0.23	Insect Screen (default)
Window 7	Window	Right Wall 2 (Right-315)	----	----	1	91.0	0.30	0.23	Insect Screen (default)

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Door	Front Wall	96.0	0.50
Door 2	Rear Interior Surface	71.1	0.50
Door 3	Rear Wall 3	512.0	1.00

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.361	• *Inside Finish: Gypsum Board* • *Cavity / Frame: no insul. / 2x4* • *Exterior Finish: 3 Coat Stucco*
Attic RoofZone 1	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 15	0.065	• *Around Roof Joists: R-2.0 insul.* • *Cavity / Frame: R-13.0 / 2x4 Top Chrd* • *Roof Deck: Wood Siding/sheathing/decking* • *Tile Gap: present* • *Roofing: 10 PSF (RoofTile)*
R-15	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.095	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Exterior Finish: 3 Coat Stucco*
Garage R-15	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.086	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Other Side Finish: Gypsum Board*
R-19 Frame Floor	Interior Floors	Wood Framed Floor	2x4 @ 16 in. O.C.	R 19	0.050	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-19 / 2x4* • *Ceiling Below Finish: Gypsum Board*
R-49 Roof Attic + R-15	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R 49	0.020	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-39.9 insul.*

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value & Depth	Carpeted Fraction	Heated
Slab-on-Grade	Zone 1	2430	151	None	0.8	No
Slab-on-Grade 2	__Garage__	1836	261	None	0	No

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
Name	System Type	Number of Systems in Building	Multi-Family Distribution Type	Water Heater	Number of Water Heaters/System	Solar Fraction (%)
DHW Sys 1	Standard	4	Multi-family: No loops or recirc pump	DHW Heater 1 (1)	1	0

WATER HEATING SYSTEMS

01	02	03	04	05	06
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)
DHW Sys 1			DHW Heater 1 (1)	1	.0%

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Factor / Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model	Tank Location or Ambient Condition
DHW Heater 1	Gas	Small Instantaneous	1	0	0.92 EF	199,000 Btu/hr	0	n/a	n/a	n/a	n/a

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
DDU-1 Unit 5R | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-2 Unit 5X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-3 Unit 4 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-4 Unit 4X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	CntrlFurnace - Fuel-fired central furnace	4	92 AFUE

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07
Name	Type	Duct Leakage	Insulation R-value	Duct Location	Bypass Duct	HERS Verification
Air Distribution System 1	DuctsAttic	Specified Lower Leakage Target	6	Attic	None	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	Required

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	

IAQ (Indoor Air Quality) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
DDU-1 Unit 5R 1/1	92	0.25	Default	0	Required
DDU-2 Unit 5X 1/1	92	0.25	Default	0	Required
DDU-3 Unit 4 1/1	77	0.25	Default	0	Required
DDU-4 Unit 4X 1/1	77	0.25	Default	0	Required

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Cristela Lujan	Documentation Author Signature: Cristela Lujan
Company: Energy Inspectors	Signature Date: 2018-07-24 12:49:41
Address: 2570 South Miller Lane	CEA/HERS Certification Identification (If applicable): NA
City/State/Zip: Las Vegas, NV 89117	Phone: 702-365-8080

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: Mitu Walia	Responsible Designer Signature: Mitu Walia
Company: Lennar Homes - San Ramon	Date Signed: 2018-07-24 13:57:36
Address: 2603 camino ramon Suite 525	License: NA
City/State/Zip: San Ramon, CA 94583	Phone: 925-327-8334

Digitally signed by CalCERTS. 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.

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CERTIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

Project Name: Building 400
Calculation Description: Title 24 Analysis
Calculation Date/Time: 12:20, Tue, Jul 24, 2018
Input File Name: Lennar_Auburn Grove Building 400-315.ribd16x

GENERAL INFORMATION					
01	Project Name	Building 400			
02	Calculation Description	Title 24 Analysis			
03	Project Location	Auburn Grove			
04	City	Livermore	05	Standards Version	Compliance 2017
06	Zip Code		07	Compliance Manager Version	BEMCmpMgr 2016.3.0 (1016 SP2)
08	Climate Zone	CZ12	09	Software Version	EnergyPro 7.2
10	Building Type	Multifamily	11	Front Orientation (deg/Cardinal)	315
12	Project Scope	Newly Constructed	13	Number of Dwelling Units	6
14	Total Cond. Floor Area (ft^2)	12133	15	Number of Zones	1
16	Slab Area (ft^2)	2278	17	Number of Stories	3
18	Addition Cond. Floor Area(ft^2)	n/a	19	Natural Gas Available	Yes
20	Addition Slab Area (ft^2)	n/a	21	Glazing Percentage (%)	11.5%

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				
04	05	06	07	08
Energy Use (kTDV/ft^2-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	14.59	15.94	-1.35	-9.3%
Space Cooling	17.86	17.41	0.45	2.5%
IAQ Ventilation	2.21	2.21	0.00	0.0%
Water Heating	10.28	9.16	1.12	10.9%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	**44.94**	**44.72**	**0.22**	**0.5%**

ENERGY DESIGN RATING

Energy Design Rating (EDR) is an alternate way to express the energy performance of a building using a scoring system where 100 represents the energy performance of the Residential Energy Services (RESNET) reference home characterization of the 2006 International Energy Conservation Code (IECC) with California modeling assumptions. A score of zero represents the energy performance of a building that combines high levels of energy efficiency with renewable generation to"zero out" its TDV energy. Because EDR includes consideration of components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics), it is not used to show compliance with Part 6 but may instead be used by local jurisdictions pursuing local ordinances under Title 24, Part 11 (CALGreen).
As a Standard Design building under the 2016 Building Energy Efficiency Standards is significantly more efficient than the baseline EDR building, the EDR of the Standard Design building is provided for Information. Similarly, the EDR score of the Proposed Design is provided separately from the EDR value of installed PV so that the effects of efficiency and renewable energy can both be seen

EDR of Standard Efficiency	EDR of Proposed Efficiency	EDR Value of Proposed PV + Battery	Final Proposed EDR
54.2	54.0	0.0	54.0

☐	**Design meets Tier 1 requirement of 15% or greater code compliance margin (CALGreen A4.203.1.2.1) and QII verification prerequisite.**
☐	**Design meets Tier 2 requirement of 30% or greater code compliance margin (CALGreen A4.203.1.2.2) and QII verification prerequisite.**
☐	**Design meets Zero Net Energy (ZNE) Design Designation requirement for Multifamily in climate zone CZ12 (Sacramento) (CALGreen A4.203.1.2.3) including on-site photovoltaic (PV) renewable energy generation sufficient to achieve a Final Energy Design Rating (EDR) of zero or less. The PV System must be verified.**

Notes:
- **Excess PV Generation EDR Credit: Bypassing PV size limit may violate Net Energy Metering (NEM) rules**

REQUIRED SPECIAL FEATURES

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

- **Non-standard roof reflectance**
- **Ceiling has high level of insulation**
- **Insulation below roof deck**

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 components tables below.

Building-level Verifications:
- **High quality insulation installation (QII)**
- **IAQ mechanical ventilation**

Cooling System Verifications:
- **-- None --**

HVAC Distribution System Verifications:
- **Duct Sealing**
- **Low-leakage Air Handling Unit**

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
Building 400	12133	6	20	1	0	6

ZONE INFORMATION

01	02	03	04	05
Zone Name	Zone Type	Zone Floor Area (ft^2)	Avg. Ceiling Height	Number of Dwelling Units
Zone 1	Conditioned	12133	9	6

DWELLING UNIT INFORMATION

01	02	03
Dwelling Unit Name	Dwelling Unit Type	Zone
DDU-1 Unit 1-(1/2)	DU-1 Unit 1	Zone 1
DDU-1 Unit 1-(2/2)	DU-1 Unit 1	Zone 1
DDU-2 Unit 3-(1/1)	DU-2 Unit 3	Zone 1
DDU-3 Unit 3X-(1/1)	DU-3 Unit 3X	Zone 1
DDU-4 Unit 2-(1/1)	DU-4 Unit 2	Zone 1
DDU-5 Unit 3Y-(1/1)	DU-5 Unit 3Y	Zone 1

DWELLING UNIT TYPES

01	02	03	04	05	06	07
Name	CFA (ft^2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
DU-1 Unit 1	1844	3	2	DDU-1 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3 DDU-1 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-2 Unit 3	2098	2	1	DDU-2 Unit 3 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-3 Unit 3X	2142	4	1	DDU-3 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-4 Unit 2	2163	4	1	DDU-4 Unit 2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-5 Unit 3Y	2042	4	1	DDU-5 Unit 3Y | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window & Door Area (ft^2)	Tilt (deg)
Front Wall	Zone 1	R-15 Wall	315	Front	1070.8	298	90
Front 2x6 Wall	Zone 1	R-21 Wall	315	Front	98.6	0	90
Left Wall	Zone 1	R-15 Wall	45	Left	216.1	41	90
Rear Wall	Zone 1	R-15 Wall	135	Back	27.3	0	90
Right Wall	Zone 1	R-15 Wall	225	Right	216.9	12.3	90
Front Wall 2	Zone 1	R-15 Wall	315	Front	805.4	152	90
Front 2x6 Wall 2	Zone 1	R-21 Wall	315	Front	382.2	240	90
Left Wall 2	Zone 1	R-15 Wall	45	Left	409.5	54	90
Left 2x6 Wall	Zone 1	R-21 Wall	45	Left	118.3	11	90
Rear Wall 2	Zone 1	R-15 Wall	135	Back	1073.8	133	90
Rear 2x6 Wall	Zone 1	R-21 Wall	315	Front	113.8	24	90
Right Wall 2	Zone 1	R-15 Wall	225	Right	409.5	60.5	90
Right 2x6 Wall	Zone 1	R-21 Wall	225	Right	118.3	13.5	90
Front Wall 3	Zone 1	R-15 Wall	315	Front	1110.2	227	90
Front 2x6 Wall 3	Zone 1	R-21 Wall	315	Front	77.4	16	90
Left Wall 3	Zone 1	R-15 Wall	45	Left	370.1	16	90
Left 2x6 Wall 2	Zone 1	R-21 Wall	45	Left	106.9	21	90
Rear Wall 3	Zone 1	R-15 Wall	135	Back	993.4	183	90
Rear 2x6 Wall 2	Zone 1	R-21 Wall	135	Back	194.1	0	90
Right Wall 3	Zone 1	R-15 Wall	225	Right	369.3	28	90
Right 2x6 Wall 2	Zone 1	R-21 Wall	225	Right	106.9	15	90
Left Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	101.6	0	n/a
Rear Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	991.9	88.9	n/a
Rear 2x6 Interior Surfac	Zone 1>>__Garage__	Garage R-21 Wall	n/a	n/a	150.2	0	n/a
Right 2x6 Interior Surfac	Zone 1>>__Garage__	Garage R-21 Wall	n/a	n/a	101.6	0	n/a
Roof	Zone 1	R-49 Roof Attic + R-15	n/a	n/a	5066	n/a	n/a
Interior Surface	Zone 1>>__Garage__	R-19 Floor No Crawlspace	n/a	n/a	2788	n/a	n/a
Interior Surface 2	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	4763	n/a	n/a
Front Wall 4	__Garage__	R-0 Wall	315	Front	45.5	0	90
Left Wall 4	__Garage__	R-0 Wall	45	Left	187.3	0	90

Rear Wall 4	__Garage__	R-0 Wall	135	Back	1186.6	672	90
Right Wall 4	__Garage__	R-0 Wall	225	Right	187.3	2.3	90

ATTIC

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic Zone 1	Attic RoofZone 1	Ventilated	5	0.15	0.8	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	Type	Surface (Orientation-Azimuth)	Width (ft)	Height (ft)	Multiplier	Area (ft^2)	U-factor	SHGC	Exterior Shading
Window	Window	Front Wall (Front-315)	----	----	1	178.0	0.30	0.23	Insect Screen (default)
Window 2	Window	Left Wall (Left-45)	----	----	1	17.0	0.30	0.23	Insect Screen (default)
Window 3	Window	Right Wall (Right-225)	----	----	1	12.3	0.30	0.23	Insect Screen (default)
Window 4	Window	Front Wall 2 (Front-315)	----	----	1	152.0	0.30	0.23	Insect Screen (default)
Window 5	Window	Front 2x6 Wall 2 (Front-315)	----	----	1	240.0	0.30	0.23	Insect Screen (default)
Window 6	Window	Left Wall 2 (Left-45)	----	----	1	54.0	0.30	0.23	Insect Screen (default)
Window 7	Window	Left 2x6 Wall (Left-45)	----	----	1	11.0	0.30	0.23	Insect Screen (default)
Window 8	Window	Rear Wall 2 (Back-135)	----	----	1	133.0	0.30	0.23	Insect Screen (default)
Window 9	Window	Rear 2x6 Wall (Front-315)	----	----	1	24.0	0.30	0.23	Insect Screen (default)
Window 10	Window	Right Wall 2 (Right-225)	----	----	1	60.5	0.30	0.23	Insect Screen (default)
Window 11	Window	Right 2x6 Wall (Right-225)	----	----	1	13.5	0.30	0.23	Insect Screen (default)
Window 12	Window	Front Wall 3 (Front-315)	----	----	1	227.0	0.30	0.23	Insect Screen (default)
Window 13	Window	Front 2x6 Wall 3 (Front-315)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 14	Window	Left Wall 3 (Left-45)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 15	Window	Left 2x6 Wall 2 (Left-45)	----	----	1	21.0	0.30	0.23	Insect Screen (default)
Window 16	Window	Rear Wall 3 (Back-135)	----	----	1	183.0	0.30	0.23	Insect Screen (default)
Window 17	Window	Right Wall 3 (Right-225)	----	----	1	28.0	0.30	0.23	Insect Screen (default)
Window 18	Window	Right 2x6 Wall 2 (Right-225)	----	----	1	15.0	0.30	0.23	Insect Screen (default)
Window 19	Window	Right Wall 4 (Right-225)	----	----	1	2.3	0.30	0.23	Insect Screen (default)

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Door	Front Wall	120.0	0.50
Door 2	Left Wall	24.0	0.50
Door 3	Rear Interior Surface	88.9	0.50
Door 4	Rear Wall 4	672.0	1.00

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.361	• *Inside Finish: Gypsum Board* • *Cavity / Frame: no insul. / 2x4* • *Exterior Finish: 3 Coat Stucco*
Attic RoofZone 1	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 15	0.070	• *Around Roof Joists: R-2.0 insul.* • *Cavity / Frame: R-13.0 / 2x4 Top Chrd* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: 5 PSF (Normal Gravel)*
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.095	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Exterior Finish: 3 Coat Stucco*
R-21 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 21	0.083	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x4* • *Exterior Finish: 3 Coat Stucco*
Garage R-15 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.086	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Other Side Finish: Gypsum Board*
Garage R-21 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 21	0.075	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x4* • *Other Side Finish: Gypsum Board*
R-19 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x4 @ 16 in. O.C.	R 19	0.050	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-19 / 2x4* • *Ceiling Below Finish: Gypsum Board*
R-49 Roof Attic + R-15	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O.C.	R 49	0.020	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-39.9 insul.*

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value & Depth	Carpeted Fraction	Heated
Slab-on-Grade	Zone 1	2278	179	None	0.8	No
Slab-on-Grade 2	__Garage__	2788	238	None	0	No

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
Name	System Type	Number of Systems in Building	Multi-Family Distribution Type	Water Heater	Number of Water Heaters/System	Solar Fraction (%)
DHW Sys 1	Standard	6	Multi-family: No loops or recirc pump	DHW Heater 1 (1)	1	0

WATER HEATING SYSTEMS

01	02	03	04	05	06
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)
DHW Sys 1			DHW Heater 1 (1)	1	.0%

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Factor / Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model	Tank Location or Ambient Condition
DHW Heater 1	Gas	Small Instantaneous	1	0	0.92 EF	199,000 Btu/hr	0	n/a	n/a	n/a	n/a

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
DDU-1 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-1 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-2 Unit 3 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-3 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-4 Unit 2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-5 Unit 3Y | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	CntrlFurnace - Fuel-fired central furnace	6	92 AFUE

HVAC - COOLING UNIT TYPES

01	02	03	04	05	06	07	08
Name	System Type	Number of Units	Efficiency EER	Efficiency SEER	Zonally Controlled	Multi-speed Compressor	HERS Verification
Cooling Component 1	SplitAirCond - Split air conditioning system	6	13	16	No	No	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target (CFM)	Verified EER	Verified SEER	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Required	Required	Required

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07
Name	Type	Duct Leakage	Insulation R-value	Duct Location	Bypass Duct	HERS Verification
Air Distribution System 1	DuctsAttic	Specified Lower Leakage Target	6	Attic	None	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	Required

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficiency (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.58

IAQ (Indoor Air Quality) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
DDU-1 Unit 1 1/2	85	0.25	Default	0	Required
DDU-2 Unit 3 1/1	85	0.25	Default	0	Required
DDU-3 Unit 3X 1/1	102	0.25	Default	0	Required
DDU-4 Unit 2 1/1	102	0.25	Default	0	Required
DDU-5 Unit 3Y 1/1	99	0.25	Default	0	Required

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Cristela Lujan	Documentation Author Signature: Cristela Lujan
Company: Energy Inspectors	Signature Date: 2018-07-24 13:00:18
Address: 2570 South Miller Lane	CEA/HERS Certification Identification (If applicable): NA
City/State/Zip: Las Vegas, NV 89117	Phone: 702-365-8080

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: Mitu Walia	Responsible Designer Signature: Mitu Walia
Company: Lennar Homes - San Ramon	Date Signed: 2018-07-24 14:02:53
Address: 2603 camino ramon Suite 525	License: NA
City/State/Zip: San Ramon, CA 94583	Phone: 925-327-8334

Digitally signed by CalCERTS. 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.

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Project Name: Building 400
Calculation Date/Time: 12:23, Tue, Jul 24, 2018
Calculation Description: Title 24 Analysis
Input File Name: Lennar_Auburn Grove Building 400R-135.ribd16x

GENERAL INFORMATION					
01	Project Name	Building 400			
02	Calculation Description	Title 24 Analysis			
03	Project Location	Auburn Grove			
04	City	Livermore	05	Standards Version	Compliance 2017
06	Zip Code		07	Compliance Manager Version	BEMCmpMgr 2016.3.0 (1016 SP2)
08	Climate Zone	CZ12	09	Software Version	EnergyPro 7.2
10	Building Type	Multifamily	11	Front Orientation (deg/Cardinal)	135
12	Project Scope	Newly Constructed	13	Number of Dwelling Units	6
14	Total Cond. Floor Area (ft^2)	12133	15	Number of Zones	1
16	Slab Area (ft^2)	2278	17	Number of Stories	3
18	Addition Cond. Floor Area(ft^2)	n/a	19	Natural Gas Available	Yes
20	Addition Slab Area (ft^2)	n/a	21	Glazing Percentage (%)	11.5%

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				
04	05	06	07	08
Energy Use ($kTDV/ft^2$-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	14.59	14.69	-0.10	-0.7%
Space Cooling	17.86	18.30	-0.44	-2.5%
IAQ Ventilation	2.21	2.21	0.00	0.0%
Water Heating	10.28	9.16	1.12	10.9%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	**44.94**	**44.36**	**0.58**	**1.3%**

ENERGY DESIGN RATING

Energy Design Rating (EDR) is an alternate way to express the energy performance of a building using a scoring system where 100 represents the energy performance of the Residential Energy Services (RESNET) reference home characterization of the 2006 International Energy Conservation Code (IECC) with California modeling assumptions. A score of zero represents the energy performance of a building that combines high levels of energy efficiency with renewable generation to"zero out" its TDV energy. Because EDR includes consideration of components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics), it is not used to show compliance with Part 6 but may instead be used by local jurisdictions pursuing local ordinances under Title 24, Part 11 (CALGreen).
As a Standard Design building under the 2016 Building Energy Efficiency Standards is significantly more efficient than the baseline EDR building, the EDR of the Standard Design building is provided for Information. Similarly, the EDR score of the Proposed Design is provided separately from the EDR value of installed PV so that the effects of efficiency and renewable energy can both be seen

EDR of Standard Efficiency	EDR of Proposed Efficiency	EDR Value of Proposed PV + Battery	Final Proposed EDR
54.2	53.8	0.0	53.8

☐	**Design meets Tier 1 requirement of 15% or greater code compliance margin (CALGreen A4.203.1.2.1) and QII verification prerequisite.**
☐	**Design meets Tier 2 requirement of 30% or greater code compliance margin (CALGreen A4.203.1.2.2) and QII verification prerequisite.**
☐	**Design meets Zero Net Energy (ZNE) Design Designation requirement for Multifamily in climate zone CZ12 (Sacramento) (CALGreen A4.203.1.2.3) including on-site photovoltaic (PV) renewable energy generation sufficient to achieve a Final Energy Design Rating (EDR) of zero or less. The PV System must be verified.**

Notes:
- **Excess PV Generation EDR Credit: Bypassing PV size limit may violate Net Energy Metering (NEM) rules**

REQUIRED SPECIAL FEATURES

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

- **Non-standard roof reflectance**
- **Ceiling has high level of insulation**
- **Insulation below roof deck**

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 components tables below.

Building-level Verifications:
- **High quality insulation installation (QII)**
- **IAQ mechanical ventilation**

Cooling System Verifications:
- **-- None --**

HVAC Distribution System Verifications:
- **Duct Sealing**
- **Low-leakage Air Handling Unit**

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
Building 400	12133	6	20	1	0	6

ZONE INFORMATION

01	02	03	04	05
Zone Name	Zone Type	Zone Floor Area (ft^2)	Avg. Ceiling Height	Number of Dwelling Units
Zone 1	Conditioned	12133	9	6

DWELLING UNIT INFORMATION

01	02	03
Dwelling Unit Name	Dwelling Unit Type	Zone
DDU-1 Unit 1-(1/2)	DU-1 Unit 1	Zone 1
DDU-1 Unit 1-(2/2)	DU-1 Unit 1	Zone 1
DDU-2 Unit 3-(1/1)	DU-2 Unit 3	Zone 1
DDU-3 Unit 3X-(1/1)	DU-3 Unit 3X	Zone 1
DDU-4 Unit 2-(1/1)	DU-4 Unit 2	Zone 1
DDU-5 Unit 3Y-(1/1)	DU-5 Unit 3Y	Zone 1

DWELLING UNIT TYPES

01	02	03	04	05	06	07
Name	CFA (ft^2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
DU-1 Unit 1	1844	3	2	DDU-1 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3 DDU-1 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-2 Unit 3	2098	2	1	DDU-2 Unit 3 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-3 Unit 3X	2142	4	1	DDU-3 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-4 Unit 2	2163	4	1	DDU-4 Unit 2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-5 Unit 3Y	2042	4	1	DDU-5 Unit 3Y | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window & Door Area (ft^2)	Tilt (deg)
Front Wall	Zone 1	R-15 Wall	135	Front	1070.8	298	90
Front 2x6 Wall	Zone 1	R-21 Wall	135	Front	98.6	0	90
Left Wall	Zone 1	R-15 Wall	225	Left	216.1	41	90
Rear Wall	Zone 1	R-15 Wall	315	Back	27.3	0	90
Right Wall	Zone 1	R-15 Wall	45	Right	216.9	12.3	90
Front Wall 2	Zone 1	R-15 Wall	135	Front	805.4	152	90
Front 2x6 Wall 2	Zone 1	R-21 Wall	135	Front	382.2	240	90
Left Wall 2	Zone 1	R-15 Wall	225	Left	409.5	54	90
Left 2x6 Wall	Zone 1	R-21 Wall	225	Left	118.3	11	90
Rear Wall 2	Zone 1	R-15 Wall	315	Back	1073.8	133	90
Rear 2x6 Wall	Zone 1	R-21 Wall	135	Front	113.8	24	90
Right Wall 2	Zone 1	R-15 Wall	45	Right	409.5	60.5	90
Right 2x6 Wall	Zone 1	R-21 Wall	45	Right	118.3	13.5	90
Front Wall 3	Zone 1	R-15 Wall	135	Front	1110.2	227	90
Front 2x6 Wall 3	Zone 1	R-21 Wall	135	Front	77.4	16	90
Left Wall 3	Zone 1	R-15 Wall	225	Left	370.1	16	90
Left 2x6 Wall 2	Zone 1	R-21 Wall	225	Left	106.9	21	90
Rear Wall 3	Zone 1	R-15 Wall	315	Back	993.4	183	90
Rear 2x6 Wall 2	Zone 1	R-21 Wall	315	Back	194.1	0	90
Right Wall 3	Zone 1	R-15 Wall	45	Right	369.3	28	90
Right 2x6 Wall 2	Zone 1	R-21 Wall	45	Right	106.9	15	90
Left Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	101.6	0	n/a
Rear Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	991.9	88.9	n/a
Rear 2x6 Interior Surfac	Zone 1>>__Garage__	Garage R-21 Wall	n/a	n/a	150.2	0	n/a
Right 2x6 Interior Surfac	Zone 1>>__Garage__	Garage R-21 Wall	n/a	n/a	101.6	0	n/a
Roof	Zone 1	R-49 Roof Attic + R-15	n/a	n/a	5066	n/a	n/a
Interior Surface	Zone 1>>__Garage__	R-19 Floor No Crawlspace	n/a	n/a	2788	n/a	n/a
Interior Surface 2	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	4763	n/a	n/a
Front Wall 4	__Garage__	R-0 Wall	135	Front	45.5	0	90
Left Wall 4	__Garage__	R-0 Wall	225	Left	187.3	0	90

Rear Wall 4	__Garage__	R-0 Wall	315	Back	1186.6	672	90
Right Wall 4	__Garage__	R-0 Wall	45	Right	187.3	0	90

ATTIC

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic Zone 1	Attic RoofZone 1	Ventilated	5	0.15	0.8	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	Type	Surface (Orientation-Azimuth)	Width (ft)	Height (ft)	Multiplier	Area (ft^2)	U-factor	SHGC	Exterior Shading
Window	Window	Front Wall (Front-135)	----	----	1	178.0	0.30	0.23	Insect Screen (default)
Window 2	Window	Left Wall (Left-225)	----	----	1	17.0	0.30	0.23	Insect Screen (default)
Window 3	Window	Right Wall (Right-45)	----	----	1	12.3	0.30	0.23	Insect Screen (default)
Window 4	Window	Front Wall 2 (Front-135)	----	----	1	152.0	0.30	0.23	Insect Screen (default)
Window 5	Window	Front 2x6 Wall 2 (Front-135)	----	----	1	240.0	0.30	0.23	Insect Screen (default)
Window 6	Window	Left Wall 2 (Left-225)	----	----	1	54.0	0.30	0.23	Insect Screen (default)
Window 7	Window	Left 2x6 Wall (Left-225)	----	----	1	11.0	0.30	0.23	Insect Screen (default)
Window 8	Window	Rear Wall 2 (Back-315)	----	----	1	133.0	0.30	0.23	Insect Screen (default)
Window 9	Window	Rear 2x6 Wall (Front-135)	----	----	1	24.0	0.30	0.23	Insect Screen (default)
Window 10	Window	Right Wall 2 (Right-45)	----	----	1	60.5	0.30	0.23	Insect Screen (default)
Window 11	Window	Right 2x6 Wall (Right-45)	----	----	1	13.5	0.30	0.23	Insect Screen (default)
Window 12	Window	Front Wall 3 (Front-135)	----	----	1	227.0	0.30	0.23	Insect Screen (default)
Window 13	Window	Front 2x6 Wall 3 (Front-135)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 14	Window	Left Wall 3 (Left-225)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 15	Window	Left 2x6 Wall 2 (Left-225)	----	----	1	21.0	0.30	0.23	Insect Screen (default)
Window 16	Window	Rear Wall 3 (Back-315)	----	----	1	183.0	0.30	0.23	Insect Screen (default)
Window 17	Window	Right Wall 3 (Right-45)	----	----	1	28.0	0.30	0.23	Insect Screen (default)
Window 18	Window	Right 2x6 Wall 2 (Right-45)	----	----	1	15.0	0.30	0.23	Insect Screen (default)

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Door	Front Wall	120.0	0.50
Door 2	Left Wall	24.0	0.50
Door 3	Rear Interior Surface	88.9	0.50
Door 4	Rear Wall 4	672.0	1.00

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.361	• *Inside Finish: Gypsum Board* • *Cavity / Frame: no insul. / 2x4* • *Exterior Finish: 3 Coat Stucco*
Attic RoofZone 1	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 15	0.070	• *Around Roof Joists: R-2.0 insul.* • *Cavity / Frame: R-13.0 / 2x4 Top Chrd* • *Roof Deck: Wood Siding/sheathing/decking* • *Roofing: 5 PSF (Normal Gravel)*
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.095	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Exterior Finish: 3 Coat Stucco*
R-21 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 21	0.083	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x4* • *Exterior Finish: 3 Coat Stucco*
Garage R-15 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.086	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Other Side Finish: Gypsum Board*
Garage R-21 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 21	0.075	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x4* • *Other Side Finish: Gypsum Board*
R-19 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x4 @ 16 in. O.C.	R 19	0.050	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-19 / 2x4* • *Ceiling Below Finish: Gypsum Board*
R-49 Roof Attic + R-15	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O.C.	R 49	0.020	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-39.9 insul.*

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value & Depth	Carpeted Fraction	Heated
Slab-on-Grade	Zone 1	2278	179	None	0.8	No
Slab-on-Grade 2	__Garage__	2788	238	None	0	No

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
Name	System Type	Number of Systems in Building	Multi-Family Distribution Type	Water Heater	Number of Water Heaters/System	Solar Fraction (%)
DHW Sys 1	Standard	6	Multi-family: No loops or recirc pump	DHW Heater 1 (1)	1	0

WATER HEATING SYSTEMS

01	02	03	04	05	06
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)
DHW Sys 1			DHW Heater 1 (1)	1	.0%

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Factor / Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model	Tank Location or Ambient Condition
DHW Heater 1	Gas	Small Instantaneous	1	0	0.92 EF	199,000 Btu/hr	0	n/a	n/a	n/a	n/a

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
DDU-1 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-1 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-2 Unit 3 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-3 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-4 Unit 2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-5 Unit 3Y | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	CntrlFurnace - Fuel-fired central furnace	6	92 AFUE

HVAC - COOLING UNIT TYPES

01	02	03	04	05	06	07	08
Name	System Type	Number of Units	Efficiency EER	Efficiency SEER	Zonally Controlled	Multi-speed Compressor	HERS Verification
Cooling Component 1	SplitAirCond - Split air conditioning system	6	13	16	No	No	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target (CFM)	Verified EER	Verified SEER	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Required	Required	Required

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07
Name	Type	Duct Leakage	Insulation R-value	Duct Location	Bypass Duct	HERS Verification
Air Distribution System 1	DuctsAttic	Specified Lower Leakage Target	6	Attic	None	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	Required

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficiency (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.58

IAQ (Indoor Air Quality) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
DDU-1 Unit 1 1/2	85	0.25	Default	0	Required
DDU-2 Unit 3 1/1	85	0.25	Default	0	Required
DDU-3 Unit 3X 1/1	102	0.25	Default	0	Required
DDU-4 Unit 2 1/1	102	0.25	Default	0	Required
DDU-5 Unit 3Y 1/1	99	0.25	Default	0	Required

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Cristela Lujan	Documentation Author Signature: Cristela Lujan
Company: Energy Inspectors	Signature Date: 2018-07-24 12:59:14
Address: 2570 South Miller Lane	CEA/HERS Certification Identification (If applicable): NA
City/State/Zip: Las Vegas, NV 89117	Phone: 702-365-8080

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: Mitu Walia	Responsible Designer Signature: Mitu Walia
Company: Lennar Homes - San Ramon	Date Signed: 2018-07-24 14:03:34
Address: 2603 camino ramon Suite 525	License: NA
City/State/Zip: San Ramon, CA 94583	Phone: 925-327-8334

Digitally signed by CalCERTS. 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.

Easy to Verify at CalCERTS.com

GENERAL INFORMATION					
01	Project Name	Building 300			
02	Calculation Description	Title 24 Analysis			
03	Project Location	Auburn Grove			
04	City	Livermore	05	Standards Version	Compliance 2017
06	Zip Code		07	Compliance Manager Version	BEMCmpMgr 2016.3.0 (1016 SP2)
08	Climate Zone	CZ12	09	Software Version	EnergyPro 7.2
10	Building Type	Multifamily	11	Front Orientation (deg/Cardinal)	45
12	Project Scope	Newly Constructed	13	Number of Dwelling Units	5
14	Total Cond. Floor Area (ft^2)	10091	15	Number of Zones	1
16	Slab Area (ft^2)	1895	17	Number of Stories	3
18	Addition Cond. Floor Area(ft^2)	n/a	19	Natural Gas Available	Yes
20	Addition Slab Area (ft^2)	n/a	21	Glazing Percentage (%)	11.9%

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				
04	05	06	07	08
Energy Use ($kTDV/ft^2$-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	14.86	16.07	-1.21	-8.1%
Space Cooling	18.68	16.78	1.90	10.2%
IAQ Ventilation	2.26	2.26	0.00	0.0%
Water Heating	10.72	9.56	1.16	10.8%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	46.52	44.67	1.85	4.0%

ENERGY DESIGN RATING

Energy Design Rating (EDR) is an alternate way to express the energy performance of a building using a scoring system where 100 represents the energy performance of the Residential Energy Services (RESNET) reference home characterization of the 2006 International Energy Conservation Code (IECC) with California modeling assumptions. A score of zero represents the energy performance of a building that combines high levels of energy efficiency with renewable generation to"zero out" its TDV energy. Because EDR includes consideration of components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics), it is not used to show compliance with Part 6 but may instead be used by local jurisdictions pursuing local ordinances under Title 24, Part 11 (CALGreen).
As a Standard Design building under the 2016 Building Energy Efficiency Standards is significantly more efficient than the baseline EDR building, the EDR of the Standard Design building is provided for Information. Similarly, the EDR score of the Proposed Design is provided separately from the EDR value of installed PV so that the effects of efficiency and renewable energy can both be seen

EDR of Standard Efficiency	EDR of Proposed Efficiency	EDR Value of Proposed PV + Battery	Final Proposed EDR
55.8	54.6	0.0	54.6

☐	**Design meets Tier 1 requirement of 15% or greater code compliance margin (CALGreen A4.203.1.2.1) and QII verification prerequisite.**
☐	**Design meets Tier 2 requirement of 30% or greater code compliance margin (CALGreen A4.203.1.2.2) and QII verification prerequisite.**
☐	**Design meets Zero Net Energy (ZNE) Design Designation requirement for Multifamily in climate zone CZ12 (Sacramento) (CALGreen A4.203.1.2.3) including on-site photovoltaic (PV) renewable energy generation sufficient to achieve a Final Energy Design Rating (EDR) of zero or less. The PV System must be verified.**

Notes:
- **Excess PV Generation EDR Credit: Bypassing PV size limit may violate Net Energy Metering (NEM) rules**

REQUIRED SPECIAL FEATURES

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

- **Non-standard roof reflectance**
- **Ceiling has high level of insulation**
- **Insulation below roof deck**

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 components tables below.

Building-level Verifications:
- **High quality insulation installation (QII)**
- **IAQ mechanical ventilation**

Cooling System Verifications:
- **-- None --**

HVAC Distribution System Verifications:
- **Duct Sealing**
- **Low-leakage Air Handling Unit**

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
Building 300	10091	5	18	1	0	5

ZONE INFORMATION

01	02	03	04	05
Zone Name	Zone Type	Zone Floor Area (ft^2)	Avg. Ceiling Height	Number of Dwelling Units
Zone 1	Conditioned	10091	9	5

DWELLING UNIT INFORMATION

01	02	03
Dwelling Unit Name	Dwelling Unit Type	Zone
DDU-1 Unit 1-(1/2)	DU-1 Unit 1	Zone 1
DDU-1 Unit 1-(2/2)	DU-1 Unit 1	Zone 1
DDU-2 Unit 2-(1/1)	DU-2 Unit 2	Zone 1
DDU-3 Unit 3-(1/1)	DU-3 Unit 3	Zone 1
DDU-4 Unit 3X-(1/1)	DU-4 Unit 3X	Zone 1

DWELLING UNIT TYPES

01	02	03	04	05	06	07
Name	CFA (ft^2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
DU-1 Unit 1	1844	3	2	DDU-1 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3 DDU-1 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-2 Unit 2	2163	4	1	DDU-2 Unit 2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-3 Unit 3	2098	4	1	DDU-3 Unit 3 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-4 Unit 3X	2142	4	1	DDU-4 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window & Door Area (ft^2)	Tilt (deg)
Front Wall	Zone 1	R-15 Wall	45	Front	878.2	235	90
Front 2x6 Wall	Zone 1	R-21 Wall	45	Front	98.6	0	90
Left Wall	Zone 1	R-15 Wall	135	Left	222.2	41	90
Rear Wall	Zone 1	R-15 Wall	225	Back	27.3	0	90
Right Wall	Zone 1	R-15 Wall	315	Right	222.2	12.3	90
Front Wall 2	Zone 1	R-15 Wall	45	Front	612.7	136	90
Front 2x6 Wall 2	Zone 1	R-21 Wall	45	Front	382.2	192	90
Left Wall 2	Zone 1	R-15 Wall	135	Left	396.6	54	90
Left 2x6 Wall	Zone 1	R-21 Wall	135	Left	118.3	11	90
Rear Wall 2	Zone 1	R-15 Wall	225	Back	881.2	115	90
Rear 2x6 Wall	Zone 1	R-21 Wall	45	Front	113.8	16	90
Right Wall 2	Zone 1	R-15 Wall	315	Right	396.6	60.5	90
Right 2x6 Wall	Zone 1	R-21 Wall	315	Right	118.3	13.5	90
Front Wall 3	Zone 1	R-15 Wall	45	Front	917.6	192	90
Front 2x6 Wall 3	Zone 1	R-15 Wall	45	Front	77.4	16	90
Left Wall 3	Zone 1	R-15 Wall	135	Left	339.7	16	90
Left 2x6 Wall 2	Zone 1	R-15 Wall	135	Left	118.3	21	90
Rear Wall 3	Zone 1	R-15 Wall	225	Back	800.8	148	90
Rear 2x6 Wall 2	Zone 1	R-15 Wall	225	Back	194.1	0	90
Right Wall 3	Zone 1	R-15 Wall	315	Right	339.7	28	90
Right 2x6 Wall 2	Zone 1	R-15 Wall	315	Right	118.3	15	90
Left Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	48.1	0	n/a
Rear Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	793.2	88.9	n/a
Rear 2x6 Interior Surfac	Zone 1>>__Garage__	Garage R-21 Wall	n/a	n/a	156.2	0	n/a
Right Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	48.5	0	n/a
Roof	Zone 1	R-49 Roof Attic + R-15	n/a	n/a	4216	n/a	n/a
Interior Surface	Zone 1>>__Garage__	R-19 Floor No Crawlspace	n/a	n/a	2321	n/a	n/a
Interior Surface 2	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	1891	n/a	n/a
Interior Surface 3	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	3965	n/a	n/a
Front Wall 4	__Garage__	R-0 Wall	45	Front	45.5	0	90

Left Wall 4	__Garage__	R-0 Wall	135	Left	187.3	0	90
Rear Wall 4	__Garage__	R-0 Wall	225	Back	994.8	560	90
Right Wall 4	__Garage__	R-0 Wall	315	Right	187.3	2.3	90

ATTIC

01	02	03	04	05	06	07	08
Name	**Construction**	**Type**	**Roof Rise**	**Roof Reflectance**	**Roof Emittance**	**Radiant Barrier**	**Cool Roof**
Attic Zone 1	Attic RoofZone 1	Ventilated	5	0.15	0.8	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	**Type**	**Surface (Orientation-Azimuth)**	**Width (ft)**	**Height (ft)**	**Multiplier**	**Area (ft^2)**	**U-factor**	**SHGC**	**Exterior Shading**
Window	Window	Front Wall (Front-45)	----	----	1	139.0	0.30	0.23	Insect Screen (default)
Window 2	Window	Left Wall (Left-135)	----	----	1	17.0	0.30	0.23	Insect Screen (default)
Window 3	Window	Right Wall (Right-315)	----	----	1	12.3	0.30	0.23	Insect Screen (default)
Window 4	Window	Front Wall 2 (Front-45)	----	----	1	136.0	0.30	0.23	Insect Screen (default)
Window 5	Window	Front 2x6 Wall 2 (Front-45)	----	----	1	192.0	0.30	0.23	Insect Screen (default)
Window 6	Window	Left Wall 2 (Left-135)	----	----	1	54.0	0.30	0.23	Insect Screen (default)
Window 7	Window	Left 2x6 Wall (Left-135)	----	----	1	11.0	0.30	0.23	Insect Screen (default)
Window 8	Window	Rear Wall 2 (Back-225)	----	----	1	115.0	0.30	0.23	Insect Screen (default)
Window 9	Window	Rear 2x6 Wall (Front-45)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 10	Window	Right Wall 2 (Right 315)	----	----	1	60.5	0.30	0.23	Insect Screen (default)
Window 11	Window	Right 2x6 Wall (Right-315)	----	----	1	13.5	0.30	0.23	Insect Screen (default)
Window 12	Window	Front Wall 3 (Front-45)	----	----	1	192.0	0.30	0.23	Insect Screen (default)
Window 13	Window	Front 2x6 Wall 3 (Front-45)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 14	Window	Left Wall 3 (Left-135)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 15	Window	Left 2x6 Wall 2 (Left-135)	----	----	1	21.0	0.30	0.23	Insect Screen (default)
Window 16	Window	Rear Wall 3 (Back-225)	----	----	1	148.0	0.30	0.23	Insect Screen (default)
Window 17	Window	Right Wall 3 (Right-315)	----	----	1	28.0	0.30	0.23	Insect Screen (default)
Window 18	Window	Right 2x6 Wall 2 (Right-315)	----	----	1	15.0	0.30	0.23	Insect Screen (default)
Window 19	Window	Right Wall 4 (Right-315)	----	----	1	2.3	0.30	0.23	Insect Screen (default)

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Door	Front Wall	96.0	0.50
Door 2	Left Wall	24.0	0.50
Door 3	Rear Interior Surface	88.9	0.50
Door 4	Rear Wall 4	560.0	1.00

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.361	• *Inside Finish: Gypsum Board* • *Cavity / Frame: no insul. / 2x4* • *Exterior Finish: 3 Coat Stucco*
Attic RoofZone 1	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 15	0.065	• *Around Roof Joists: R-2.0 insul.* • *Cavity / Frame: R-13.0 / 2x4 Top Chrd* • *Roof Deck: Wood Siding/sheathing/decking* • *Tile Gap: present* • *Roofing: 10 PSF (RoofTile)*
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.095	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Exterior Finish: 3 Coat Stucco*
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.069	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x6* • *Exterior Finish: 3 Coat Stucco*
Garage R-15 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.086	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Other Side Finish: Gypsum Board*
Garage R-21 Wall	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.064	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x6* • *Other Side Finish: Gypsum Board*
R-19 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x8 @ 16 in. O.C.	R 19	0.046	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-19 / 2x8* • *Ceiling Below Finish: Gypsum Board*
R-49 Roof Attic + R-15	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R 49	0.020	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-39.9 insul.*

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value & Depth	Carpeted Fraction	Heated
Slab-on-Grade	Zone 1	1895	159	None	0.8	No
Slab-on-Grade 2	__Garage__	2341	215	None	0	No

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
Name	System Type	Number of Systems in Building	Multi-Family Distribution Type	Water Heater	Number of Water Heaters/System	Solar Fraction (%)
DHW Sys 1	Standard	5	Multi-family: No loops or recirc pump	DHW Heater 1 (1)	1	0

WATER HEATING SYSTEMS

01	02	03	04	05	06
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)
DHW Sys 1			DHW Heater 1 (1)	1	.0%

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Factor / Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model	Tank Location or Ambient Condition
DHW Heater 1	Gas	Small Instantaneous	1	0	0.92 EF	199,000 Btu/hr	0	n/a	n/a	n/a	n/a

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
DDU-1 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-1 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-2 Unit 2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-3 Unit 3 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-4 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	CntrlFurnace - Fuel-fired central furnace	5	92 AFUE

HVAC - COOLING UNIT TYPES

01	02	03	04	05	06	07	08
Name	System Type	Number of Units	Efficiency EER	Efficiency SEER	Zonally Controlled	Multi-speed Compressor	HERS Verification
Cooling Component 1	SplitAirCond - Split air conditioning system	5	13	16	No	No	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target (CFM)	Verified EER	Verified SEER	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Required	Required	Required

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07
Name	Type	Duct Leakage	Insulation R-value	Duct Location	Bypass Duct	HERS Verification
Air Distribution System 1	DuctsAttic	Specified Lower Leakage Target	6	Attic	None	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	Required

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficiency (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.58

IAQ (Indoor Air Quality) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
DDU-1 Unit 1 1/2	85	0.25	Default	0	Required
DDU-2 Unit 2 1/1	102	0.25	Default	0	Required
DDU-3 Unit 3 1/1	100	0.25	Default	0	Required
DDU-4 Unit 3X 1/1	102	0.25	Default	0	Required

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Cristela Lujan	Documentation Author Signature: Cristela Lujan
Company: Energy Inspectors	Signature Date: 2018-07-24 12:59:17
Address: 2570 South Miller Lane	CEA/HERS Certification Identification (If applicable): NA
City/State/Zip: Las Vegas, NV 89117	Phone: 702-365-8080

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.
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Responsible Designer Name: Mitu Walia	Responsible Designer Signature: Mitu Walia
Company: Lennar Homes - San Ramon	Date Signed: 2018-07-24 14:02:26
Address: 2603 camino ramon Suite 525	License: NA
City/State/Zip: San Ramon, CA 94583	Phone: 925-327-8334

Digitally signed by CalCERTS. 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.

Easy to Verify at CalCERTS.com

Project Name: Building 300
Calculation Description: Title 24 Analysis
Calculation Date/Time: 12:13, Tue, Jul 24, 2018
Input File Name: Lennar_Auburn Grove Building 300-225.ribd16x

GENERAL INFORMATION					
01	Project Name	Building 300			
02	Calculation Description	Title 24 Analysis			
03	Project Location	Auburn Grove			
04	City	Livermore	05	Standards Version	Compliance 2017
06	Zip Code		07	Compliance Manager Version	BEMCmpMgr 2016.3.0 (1016 SP2)
08	Climate Zone	CZ12	09	Software Version	EnergyPro 7.2
10	Building Type	Multifamily	11	Front Orientation (deg/Cardinal)	225
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16	Slab Area (ft^2)	1895	17	Number of Stories	3
18	Addition Cond. Floor Area(ft^2)	n/a	19	Natural Gas Available	Yes
20	Addition Slab Area (ft^2)	n/a	21	Glazing Percentage (%)	11.9%

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Water Heating	10.72	9.56	1.16	10.8%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	**46.52**	**46.18**	**0.34**	**0.7%**

ENERGY DESIGN RATING

Energy Design Rating (EDR) is an alternate way to express the energy performance of a building using a scoring system where 100 represents the energy performance of the Residential Energy Services (RESNET) reference home characterization of the 2006 International Energy Conservation Code (IECC) with California modeling assumptions. A score of zero represents the energy performance of a building that combines high levels of energy efficiency with renewable generation to"zero out" its TDV energy. Because EDR includes consideration of components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics), it is not used to show compliance with Part 6 but may instead be used by local jurisdictions pursuing local ordinances under Title 24, Part 11 (CALGreen).
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☐	**Design meets Zero Net Energy (ZNE) Design Designation requirement for Multifamily in climate zone CZ12 (Sacramento) (CALGreen A4.203.1.2.3) including on-site photovoltaic (PV) renewable energy generation sufficient to achieve a Final Energy Design Rating (EDR) of zero or less. The PV System must be verified.**

Notes:
- **Excess PV Generation EDR Credit: Bypassing PV size limit may violate Net Energy Metering (NEM) rules**

REQUIRED SPECIAL FEATURES

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

- **Ceiling has high level of insulation**
- **Insulation below roof deck**

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 components tables below.

Building-level Verifications:
- **High quality insulation installation (QII)**
- **IAQ mechanical ventilation**

Cooling System Verifications:
- **-- None --**

HVAC Distribution System Verifications:
- **Duct Sealing**
- **Low-leakage Air Handling Unit**

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
Building 300	10091	5	18	1	0	5

ZONE INFORMATION

01	02	03	04	05
Zone Name	Zone Type	Zone Floor Area (ft^2)	Avg. Ceiling Height	Number of Dwelling Units
Zone 1	Conditioned	10091	9	5

DWELLING UNIT INFORMATION

01	02	03
Dwelling Unit Name	Dwelling Unit Type	Zone
DDU-1 Unit 1-(1/2)	DU-1 Unit 1	Zone 1
DDU-1 Unit 1-(2/2)	DU-1 Unit 1	Zone 1
DDU-2 Unit 2-(1/1)	DU-2 Unit 2	Zone 1
DDU-3 Unit 3-(1/1)	DU-3 Unit 3	Zone 1
DDU-4 Unit 3X-(1/1)	DU-4 Unit 3X	Zone 1

DWELLING UNIT TYPES

01	02	03	04	05	06	07
Name	CFA (ft^2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
DU-1 Unit 1	1844	3	2	DDU-1 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3 DDU-1 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-2 Unit 2	2163	4	1	DDU-2 Unit 2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-3 Unit 3	2098	4	1	DDU-3 Unit 3 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-4 Unit 3X	2142	4	1	DDU-4 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window & Door Area (ft^2)	Tilt (deg)
Front Wall	Zone 1	R-15 Wall	225	Front	878.2	235	90
Front 2x6 Wall	Zone 1	R-21 Wall	225	Front	98.6	0	90
Left Wall	Zone 1	R-15 Wall	315	Left	222.2	41	90
Rear Wall	Zone 1	R-15 Wall	45	Back	27.3	0	90
Right Wall	Zone 1	R-15 Wall	135	Right	222.2	12.3	90
Front Wall 2	Zone 1	R-15 Wall	225	Front	612.7	136	90
Front 2x6 Wall 2	Zone 1	R-21 Wall	225	Front	382.2	192	90
Left Wall 2	Zone 1	R-15 Wall	315	Left	396.6	54	90
Left 2x6 Wall	Zone 1	R-21 Wall	315	Left	118.3	11	90
Rear Wall 2	Zone 1	R-15 Wall	45	Back	881.2	115	90
Rear 2x6 Wall	Zone 1	R-21 Wall	225	Front	113.8	16	90
Right Wall 2	Zone 1	R-15 Wall	135	Right	396.6	60.5	90
Right 2x6 Wall	Zone 1	R-21 Wall	135	Right	118.3	13.5	90
Front Wall 3	Zone 1	R-15 Wall	225	Front	917.6	192	90
Front 2x6 Wall 3	Zone 1	R-15 Wall	225	Front	77.4	16	90
Left Wall 3	Zone 1	R-15 Wall	315	Left	339.7	16	90
Left 2x6 Wall 2	Zone 1	R-15 Wall	315	Left	118.3	21	90
Rear Wall 3	Zone 1	R-15 Wall	45	Back	800.8	148	90
Rear 2x6 Wall 2	Zone 1	R-15 Wall	45	Back	194.1	0	90
Right Wall 3	Zone 1	R-15 Wall	135	Right	339.7	28	90
Right 2x6 Wall 2	Zone 1	R-15 Wall	135	Right	118.3	15	90
Left Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	48.1	0	n/a
Rear Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	793.2	88.9	n/a
Rear 2x6 Interior Surfac	Zone 1>>__Garage__	Garage R-21 Wall	n/a	n/a	156.2	0	n/a
Right Interior Surface	Zone 1>>__Garage__	Garage R-15 Wall	n/a	n/a	48.5	0	n/a
Roof	Zone 1	R-49 Roof Attic + R-15	n/a	n/a	4216	n/a	n/a
Interior Surface	Zone 1>>__Garage__	R-19 Floor No Crawlspace	n/a	n/a	2321	n/a	n/a
Interior Surface 2	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	1891	n/a	n/a
Interior Surface 3	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	3965	n/a	n/a
Front Wall 4	__Garage__	R-0 Wall	225	Front	45.5	0	90

Left Wall 4	__Garage__	R-0 Wall	315	Left	187.3	0	90
Rear Wall 4	__Garage__	R-0 Wall	45	Back	994.8	560	90
Right Wall 4	__Garage__	R-0 Wall	135	Right	187.3	2.3	90

ATTIC

01	02	03	04	05	06	07	08
Name	**Construction**	**Type**	**Roof Rise**	**Roof Reflectance**	**Roof Emittance**	**Radiant Barrier**	**Cool Roof**
Attic Zone 1	Attic RoofZone 1	Ventilated	5	0.1	0.85	Yes	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	**Type**	**Surface (Orientation-Azimuth)**	**Width (ft)**	**Height (ft)**	**Multiplier**	**Area (ft^2)**	**U-factor**	**SHGC**	**Exterior Shading**
Window	Window	Front Wall (Front-225)	----	----	1	139.0	0.30	0.23	Insect Screen (default)
Window 2	Window	Left Wall (Left-315)	----	----	1	17.0	0.30	0.23	Insect Screen (default)
Window 3	Window	Right Wall (Right-135)	----	----	1	12.3	0.30	0.23	Insect Screen (default)
Window 4	Window	Front Wall 2 (Front-225)	----	----	1	136.0	0.30	0.23	Insect Screen (default)
Window 5	Window	Front 2x6 Wall 2 (Front-225)	----	----	1	192.0	0.30	0.23	Insect Screen (default)
Window 6	Window	Left Wall 2 (Left-315)	----	----	1	54.0	0.30	0.23	Insect Screen (default)
Window 7	Window	Left 2x6 Wall (Left-315)	----	----	1	11.0	0.30	0.23	Insect Screen (default)
Window 8	Window	Rear Wall 2 (Back-45)	----	----	1	115.0	0.30	0.23	Insect Screen (default)
Window 9	Window	Rear 2x6 Wall (Front-225)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 10	Window	Right Wall 2 (Right-135)	----	----	1	60.5	0.30	0.23	Insect Screen (default)
Window 11	Window	Right 2x6 Wall (Right-135)	----	----	1	13.5	0.30	0.23	Insect Screen (default)
Window 12	Window	Front Wall 3 (Front-225)	----	----	1	192.0	0.30	0.23	Insect Screen (default)
Window 13	Window	Front 2x6 Wall 3 (Front-225)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 14	Window	Left Wall 3 (Left-315)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 15	Window	Left 2x6 Wall 2 (Left-315)	----	----	1	21.0	0.30	0.23	Insect Screen (default)
Window 16	Window	Rear Wall 3 (Back-45)	----	----	1	148.0	0.30	0.23	Insect Screen (default)
Window 17	Window	Right Wall 3 (Right-135)	----	----	1	28.0	0.30	0.23	Insect Screen (default)
Window 18	Window	Right 2x6 Wall 2 (Right-135)	----	----	1	15.0	0.30	0.23	Insect Screen (default)
Window 19	Window	Right Wall 4 (Right-135)	----	----	1	2.3	0.30	0.23	Insect Screen (default)

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Door	Front Wall	96.0	0.50
Door 2	Left Wall	24.0	0.50
Door 3	Rear Interior Surface	88.9	0.50
Door 4	Rear Wall 4	560.0	1.00

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	none	0.361	• *Inside Finish: Gypsum Board* • *Cavity / Frame: no insul. / 2x4* • *Exterior Finish: 3 Coat Stucco*
Attic RoofZone 1	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 15	0.065	• *Around Roof Joists: R-2.0 insul.* • *Cavity / Frame: R-13.0 / 2x4 Top Chrd* • *Roof Deck: Wood Siding/sheathing/decking* • *Tile Gap: present* • *Roofing: 10 PSF (RoofTile)*
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.095	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Exterior Finish: 3 Coat Stucco*
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.069	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x6* • *Exterior Finish: 3 Coat Stucco*
Garage R-15 Wall	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.086	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Other Side Finish: Gypsum Board*
Garage R-21 Wall	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.064	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x6* • *Other Side Finish: Gypsum Board*
R-19 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x8 @ 16 in. O.C.	R 19	0.046	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: R-19 / 2x8* • *Ceiling Below Finish: Gypsum Board*
R-49 Roof Attic + R-15	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 24 in. O.C.	R 49	0.020	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-39.9 insul.*

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value & Depth	Carpeted Fraction	Heated
Slab-on-Grade	Zone 1	1895	159	None	0.8	No
Slab-on-Grade 2	__Garage__	2341	215	None	0	No

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
Name	System Type	Number of Systems in Building	Multi-Family Distribution Type	Water Heater	Number of Water Heaters/System	Solar Fraction (%)
DHW Sys 1	Standard	5	Multi-family: No loops or recirc pump	DHW Heater 1 (1)	1	0

WATER HEATING SYSTEMS

01	02	03	04	05	06
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)
DHW Sys 1			DHW Heater 1 (1)	1	.0%

WATER HEATERS

01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Factor / Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model	Tank Location or Ambient Condition
DHW Heater 1	Gas	Small Instantaneous	1	0	0.92 EF	199,000 Btu/hr	0	n/a	n/a	n/a	n/a

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
DDU-1 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-1 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-2 Unit 2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-3 Unit 3 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-4 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	CntrlFurnace - Fuel-fired central furnace	5	92 AFUE

HVAC - COOLING UNIT TYPES

01	02	03	04	05	06	07	08
			Efficiency				
Name	System Type	Number of Units	EER	SEER	Zonally Controlled	Multi-speed Compressor	HERS Verification
Cooling Component 1	SplitAirCond - Split air conditioning system	5	13	16	No	No	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target (CFM)	Verified EER	Verified SEER	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Required	Required	Required

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07
Name	Type	Duct Leakage	Insulation R-value	Duct Location	Bypass Duct	HERS Verification
Air Distribution System 1	DuctsAttic	Specified Lower Leakage Target	6	Attic	None	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	Required

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficiency (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.58

IAQ (Indoor Air Quality) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
DDU-1 Unit 1 1/2	85	0.25	Default	0	Required
DDU-2 Unit 2 1/1	102	0.25	Default	0	Required
DDU-3 Unit 3 1/1	100	0.25	Default	0	Required
DDU-4 Unit 3X 1/1	102	0.25	Default	0	Required

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Cristela Lujan	Documentation Author Signature: Cristela Lujan
Company: Energy Inspectors	Signature Date: 2018-07-24 12:57:23
Address: 2570 South Miller Lane	CEA/HERS Certification Identification (If applicable): NA
City/State/Zip: Las Vegas, NV 89117	Phone: 702-365-8080

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: Mitu Walia	Responsible Designer Signature: Mitu Walia
Company: Lennar Homes - San Ramon	Date Signed: 2018-07-24 13:59:23
Address: 2603 camino ramon Suite 525	License: NA
City/State/Zip: San Ramon, CA 94583	Phone: 925-327-8334

Digitally signed by CalCERTS. 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.

Easy to Verify at CalCERTS.com

TIFICATE OF COMPLIANCE - RESIDENTIAL PERFORMANCE COMPLIANCE METHOD

ct Name: Building 200
lation Description: Title 24 Analysis
Calculation Date/Time: 12:00, Tue, Jul 24, 2018
Input File Name: Lennar_Auburn Grove Building 200 -315.ribd16x

GENERAL INFORMATION					
01	Project Name	Building 200			
02	Calculation Description	Title 24 Analysis			
03	Project Location	Auburn Grove			
04	City	Livermore	05	Standards Version	Compliance 2017
06	Zip Code		07	Compliance Manager Version	BEMCmpMgr 2016.3.0 (1016 SP2)
08	Climate Zone	CZ12	09	Software Version	EnergyPro 7.2
10	Building Type	Multifamily	11	Front Orientation (deg/Cardinal)	315
12	Project Scope	Newly Constructed	13	Number of Dwelling Units	4
14	Total Cond. Floor Area (ft^2)	7928	15	Number of Zones	1
16	Slab Area (ft^2)	1499	17	Number of Stories	3
18	Addition Cond. Floor Area(ft^2)	n/a	19	Natural Gas Available	Yes
20	Addition Slab Area (ft^2)	n/a	21	Glazing Percentage (%)	12.3%

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				
04	05	06	07	08
Energy Use ($kTDV/ft^2$-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	15.32	18.82	-3.50	-22.8%
Space Cooling	19.19	16.38	2.81	14.6%
IAQ Ventilation	2.26	2.26	0.00	0.0%
Water Heating	10.68	9.52	1.16	10.9%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	**47.45**	**46.98**	**0.47**	**1.0%**

ENERGY DESIGN RATING

Energy Design Rating (EDR) is an alternate way to express the energy performance of a building using a scoring system where 100 represents the energy performance of the Residential Energy Services (RESNET) reference home characterization of the 2006 International Energy Conservation Code (IECC) with California modeling assumptions. A score of zero represents the energy performance of a building that combines high levels of energy efficiency with renewable generation to"zero out" its TDV energy. Because EDR includes consideration of components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics), it is not used to show compliance with Part 6 but may instead be used by local jurisdictions pursuing local ordinances under Title 24, Part 11 (CALGreen).
As a Standard Design building under the 2016 Building Energy Efficiency Standards is significantly more efficient than the baseline EDR building, the EDR of the Standard Design building is provided for Information. Similarly, the EDR score of the Proposed Design is provided separately from the EDR value of installed PV so that the effects of efficiency and renewable energy can both be seen

EDR of Standard Efficiency	EDR of Proposed Efficiency	EDR Value of Proposed PV + Battery	Final Proposed EDR
55.7	55.4	0.0	55.4

☐	**Design meets Tier 1 requirement of 15% or greater code compliance margin (CALGreen A4.203.1.2.1) and QII verification prerequisite.**
☐	**Design meets Tier 2 requirement of 30% or greater code compliance margin (CALGreen A4.203.1.2.2) and QII verification prerequisite.**
☐	**Design meets Zero Net Energy (ZNE) Design Designation requirement for Multifamily in climate zone CZ12 (Sacramento) (CALGreen A4.203.1.2.3) including on-site photovoltaic (PV) renewable energy generation sufficient to achieve a Final Energy Design Rating (EDR) of zero or less. The PV System must be verified.**

Notes:
- **Excess PV Generation EDR Credit: Bypassing PV size limit may violate Net Energy Metering (NEM) rules**

REQUIRED SPECIAL FEATURES

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

- **Non-standard roof reflectance**
- **Ceiling has high level of insulation**
- **Insulation below roof deck**
- **Window overhangs and/or fins**

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 components tables below.

Building-level Verifications:
- **High quality insulation installation (QII)**
- **IAQ mechanical ventilation**

Cooling System Verifications:
- **-- None --**

HVAC Distribution System Verifications:
- **Duct Sealing**
- **Low-leakage Air Handling Unit**

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
Building 200	7928	4	14	1	0	4

ZONE INFORMATION

01	02	03	04	05
Zone Name	Zone Type	Zone Floor Area (ft^2)	Avg. Ceiling Height	Number of Dwelling Units
Zone 1	Conditioned	7928	9	4

DWELLING UNIT INFORMATION

01	02	03
Dwelling Unit Name	Dwelling Unit Type	Zone
DDU-1 Unit 3R -(1/1)	DU-1 Unit 3R	Zone 1
DDU-2 Unit 3X-(1/1)	DU-2 Unit 3X	Zone 1
DDU-3 Unit 1-(1/2)	DU-3 Unit 1	Zone 1
DDU-3 Unit 1-(2/2)	DU-3 Unit 1	Zone 1

DWELLING UNIT TYPES

01	02	03	04	05	06	07
Name	CFA (ft^2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
DU-1 Unit 3R	2098	4	1	DDU-1 Unit 3R | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-2 Unit 3X	2142	4	1	DDU-2 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-3 Unit 1	1844	3	2	DDU-3 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3 DDU-3 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan

OPAQUE SURFACES							
01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window & Door Area (ft^2)	Tilt (deg)
Front Wall	Zone 1	R-15 Wall	315	Front	684	172	90
Front 2x6 Wall	Zone 1	R-21 Wall	315	Front	98.6	0	90
Left Wall	Zone 1	R-15 Wall	45	Left	191.6	41	90
Rear Wall	Zone 1	R-15 Wall	135	Back	27.3	0	90
Right Wall	Zone 1	R-15 Wall	225	Right	191.9	12.3	90
Front Wall 2	Zone 1	R-15 Wall	315	Front	418.6	150.948	90
Front 2x6 Wall 2	Zone 1	R-21 Wall	315	Front	379.9	128	90
Left Wall 2	Zone 1	R-15 Wall	45	Left	279.1	65	90
Left 2x6 Wall	Zone 1	R-21 Wall	45	Left	118.3	0	90
Rear Wall 2	Zone 1	R-15 Wall	135	Back	683.3	16	90
Rear 2x6 Wall	Zone 1	R-21 Wall	315	Front	115.3	60	90
Right Wall 2	Zone 1	R-15 Wall	225	Right	279.1	60.5	90
Right 2x6 Wall	Zone 1	R-21 Wall	225	Right	118.3	13.5	90
Front Wall 3	Zone 1	R-15 Wall	315	Front	723.5	146	90
Front 2x6 Wall 3	Zone 1	R-21 Wall	315	Front	75.1	16	90
Left Wall 3	Zone 1	R-15 Wall	45	Left	290.4	6	90
Left 2x6 Wall 2	Zone 1	R-21 Wall	45	Left	106.9	31	90
Rear Wall 3	Zone 1	R-21 Wall	135	Back	799.9	113	90
Right Wall 3	Zone 1	R-15 Wall	225	Right	290.4	37	90
Right 2x6 Wall 2	Zone 1	R-21 Wall	225	Right	106.9	0	90
Left Interior Surface	Zone 1>>__Garage__	Garage R-13	n/a	n/a	50.1	0	n/a
Rear Interior Surface	Zone 1>>__Garage__	Garage R-13	n/a	n/a	601.3	71.1	n/a
Rear 2x6 Interior Surfac	Zone 1>>__Garage__	Garage R-21	n/a	n/a	151.7	0	n/a
Right Interior Surface	Zone 1>>__Garage__	Garage R-13	n/a	n/a	50	0	n/a
Roof	Zone 1	R-49 Roof Attic+ R-15	n/a	n/a	3341	n/a	n/a
Interior Surface	Zone 1>>__Garage__	R-19 Floor No Crawlspace	n/a	n/a	1842	n/a	n/a
Interior Surface 2	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	1525	n/a	n/a
Interior Surface 3	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	3066	n/a	n/a
Front Wall 4	__Garage__	R-0 Wall	315	Front	45.5	0	90
Left Wall 4	__Garage__	R-0 Wall	45	Left	187.3	0	90

Rear Wall 4	__Garage__	R-0 Wall	135	Back	799.9	448	90
Right Wall 4	__Garage__	R-0 Wall	225	Right	187.3	0	90

ATTIC

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic Zone 1	Attic RoofZone 1	Ventilated	5	0.15	0.8	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	Type	Surface (Orientation-Azimuth)	Width (ft)	Height (ft)	Multiplier	Area (ft^2)	U-factor	SHGC	Exterior Shading
Window OH	Window	Front Wall (Front-315)	20.0	5.0	1	100.0	0.30	0.23	Insect Screen (default)
Window	Window	Left Wall (Left-45)	----	----	1	17.0	0.30	0.23	Insect Screen (default)
Window 2	Window	Right Wall (Right-225)	----	----	1	12.3	0.30	0.23	Insect Screen (default)
Window OH 2	Window	Front Wall 2 (Front-315)	25.2	5.0	1.198	150.9	0.30	0.23	Insect Screen (default)
Window OH 3	Window	Front 2x6 Wall 2 (Front-315)	25.6	5.0	1	128.0	0.30	0.23	Insect Screen (default)
Window 3	Window	Left Wall 2 (Left-45)	----	----	1	65.0	0.30	0.23	Insect Screen (default)
Window 4	Window	Rear Wall 2 (Back-135)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 5	Window	Rear 2x6 Wall (Front-315)	----	----	1	60.0	0.30	0.23	Insect Screen (default)
Window 6	Window	Right Wall 2 (Right-225)	----	----	1	60.5	0.30	0.23	Insect Screen (default)
Window 7	Window	Right 2x6 Wall (Right-225)	----	----	1	13.5	0.30	0.23	Insect Screen (default)
Window 8	Window	Front Wall 3 (Front-315)	----	----	1	146.0	0.30	0.23	Insect Screen (default)
Window 9	Window	Front 2x6 Wall 3 (Front-315)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 10	Window	Left Wall 3 (Left-45)	----	----	1	6.0	0.30	0.23	Insect Screen (default)
Window 11	Window	Left 2x6 Wall 2 (Left-45)	----	----	1	31.0	0.30	0.23	Insect Screen (default)
Window 12	Window	Rear Wall 3 (Back-135)	----	----	1	113.0	0.30	0.23	Insect Screen (default)
Window 13	Window	Right Wall 3 (Right-225)	----	----	1	37.0	0.30	0.23	Insect Screen (default)

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Door	Front Wall	72.0	0.50
Door 2	Left Wall	24.0	0.50
Door 3	Rear Interior Surface	71.1	0.50
Door 4	Rear Wall 4	448.0	1.00

OVERHANGS AND FINS

01	02	03	04	05	06	07	08	09	10	11	12	13	14
	Overhang					Left Fin				Right Fin			
Window	Depth	Dist Up	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	Dist L	Bot Up	Depth	Top Up	Dist R	Bot Up
Window OH	6	1	2	2	0	0	0	0	0	0	0	0	0
Window OH 2	6	1	2	2	0	0	0	0	0	0	0	0	0
Window OH 3	6	1	2	2	0	0	0	0	0	0	0	0	0

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 13	0.101	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-13 / 2x4* • *Exterior Finish: 3 Coat Stucco*
Attic RoofZone 1	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 15	0.065	• *Around Roof Joists: R-2.0 insul.* • *Cavity / Frame: R-13.0 / 2x4 Top Chrd* • *Roof Deck: Wood Siding/sheathing/decking* • *Tile Gap: present* • *Roofing: 10 PSF (RoofTile)*
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.095	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Exterior Finish: 3 Coat Stucco*
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.069	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x6* • *Exterior Finish: 3 Coat Stucco*
Garage R-13	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 13	0.092	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-13 / 2x4* • *Other Side Finish: Gypsum Board*
Garage R-21	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.064	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x6* • *Other Side Finish: Gypsum Board*
R-19 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O.C.	none	0.196	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: no insul. / 2x12* • *Ceiling Below Finish: Gypsum Board*
R-49 Roof Attic+ R-15	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O.C.	R 49	0.020	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-39.9 insul.*

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value & Depth	Carpeted Fraction	Heated
Slab-on-Grade	Zone 1	1499	131	None	0.8	No
Slab-on-Grade 2	__Garage__	1847	266	None	0	No

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
Name	System Type	Number of Systems in Building	Multi-Family Distribution Type	Water Heater	Number of Water Heaters/System	Solar Fraction (%)
DHW Sys 1	Standard	4	Multi-family: No loops or recirc pump	DHW Heater 1 (1)	1	0

WATER HEATING SYSTEMS					
01	02	03	04	05	06
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)
DHW Sys 1			DHW Heater 1 (1)	1	.0%

WATER HEATERS											
01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Factor / Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model	Tank Location or Ambient Condition
DHW Heater 1	Gas	Small Instantaneous	1	0	0.92 EF	199,000 Btu/hr	0	n/a	n/a	n/a	n/a

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
DDU-1 Unit 3R | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-2 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-3 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-3 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	CntrlFurnace - Fuel-fired central furnace	4	92 AFUE

HVAC - COOLING UNIT TYPES

01	02	03	04	05	06	07	08
Name	System Type	Number of Units	Efficiency EER	Efficiency SEER	Zonally Controlled	Multi-speed Compressor	HERS Verification
Cooling Component 1	SplitAirCond - Split air conditioning system	4	13	16	No	No	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target (CFM)	Verified EER	Verified SEER	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Required	Required	Required

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07
Name	Type	Duct Leakage	Insulation R-value	Duct Location	Bypass Duct	HERS Verification
Air Distribution System 1	DuctsAttic	Specified Lower Leakage Target	6	Attic	None	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	Required

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficiency (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.58

IAQ (Indoor Air Quality) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
DDU-1 Unit 3R 1/1	100	0.25	Default	0	Required
DDU-2 Unit 3X 1/1	102	0.25	Default	0	Required
DDU-3 Unit 1 1/2	85	0.25	Default	0	Required

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Cristela Lujan	Documentation Author Signature: Cristela Lujan
Company: Energy Inspectors	Signature Date: 2018-07-24 12:52:48
Address: 2570 South Miller Lane	CEA/HERS Certification Identification (If applicable): NA
City/State/Zip: Las Vegas, NV 89117	Phone: 702-365-8080

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: Mitu Walia	Responsible Designer Signature: Mitu Walia
Company: Lennar Homes - San Ramon	Date Signed: 2018-07-24 13:58:07
Address: 2603 camino ramon Suite 525	License: NA
City/State/Zip: San Ramon, CA 94583	Phone: 925-327-8334

Digitally signed by CalCERTS. 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.

Easy to Verify at CalCERTS.com

GENERAL INFORMATION					
01	Project Name	Building 200			
02	Calculation Description	Title 24 Analysis			
03	Project Location	Auburn Grove			
04	City	Livermore	05	Standards Version	Compliance 2017
06	Zip Code		07	Compliance Manager Version	BEMCmpMgr 2016.3.0 (1016 SP2)
08	Climate Zone	CZ12	09	Software Version	EnergyPro 7.2
10	Building Type	Multifamily	11	Front Orientation (deg/Cardinal)	135
12	Project Scope	Newly Constructed	13	Number of Dwelling Units	4
14	Total Cond. Floor Area (ft^2)	7928	15	Number of Zones	1
16	Slab Area (ft^2)	1499	17	Number of Stories	3
18	Addition Cond. Floor Area(ft^2)	n/a	19	Natural Gas Available	Yes
20	Addition Slab Area (ft^2)	n/a	21	Glazing Percentage (%)	12.3%

REVIEWED
CITY OF LIVERMORE
BUILDING DIVISION
AUG 17 2018
BY: BLAKE WARMERDAM

OFFICE COPY
PROJECT #

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				
04	05	06	07	08
Energy Use (kTDV/ft^2-yr)	Standard Design	Proposed Design	Compliance Margin	Percent Improvement
Space Heating	15.32	17.29	-1.97	-12.9%
Space Cooling	19.19	17.91	1.28	6.7%
IAQ Ventilation	2.26	2.26	0.00	0.0%
Water Heating	10.68	9.52	1.16	10.9%
Photovoltaic Offset	----	0.00	0.00	----
Compliance Energy Total	**47.45**	**46.98**	**0.47**	**1.0%**

PLANCHECK 3
PROJECT #

ENERGY DESIGN RATING

Energy Design Rating (EDR) is an alternate way to express the energy performance of a building using a scoring system where 100 represents the energy performance of the Residential Energy Services (RESNET) reference home characterization of the 2006 International Energy Conservation Code (IECC) with California modeling assumptions. A score of zero represents the energy performance of a building that combines high levels of energy efficiency with renewable generation to"zero out" its TDV energy. Because EDR includes consideration of components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics), it is not used to show compliance with Part 6 but may instead be used by local jurisdictions pursuing local ordinances under Title 24, Part 11 (CALGreen).
As a Standard Design building under the 2016 Building Energy Efficiency Standards is significantly more efficient than the baseline EDR building, the EDR of the Standard Design building is provided for Information. Similarly, the EDR score of the Proposed Design is provided separately from the EDR value of installed PV so that the effects of efficiency and renewable energy can both be seen

EDR of Standard Efficiency	EDR of Proposed Efficiency	EDR Value of Proposed PV + Battery	Final Proposed EDR
55.7	55.4	0.0	55.4

☐	**Design meets Tier 1 requirement of 15% or greater code compliance margin (CALGreen A4.203.1.2.1) and QII verification prerequisite.**
☐	**Design meets Tier 2 requirement of 30% or greater code compliance margin (CALGreen A4.203.1.2.2) and QII verification prerequisite.**
☐	**Design meets Zero Net Energy (ZNE) Design Designation requirement for Multifamily in climate zone CZ12 (Sacramento) (CALGreen A4.203.1.2.3) including on-site photovoltaic (PV) renewable energy generation sufficient to achieve a Final Energy Design Rating (EDR) of zero or less. The PV System must be verified.**

Notes:
- **Excess PV Generation EDR Credit: Bypassing PV size limit may violate Net Energy Metering (NEM) rules**

REQUIRED SPECIAL FEATURES

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

- **Non-standard roof reflectance**
- **Ceiling has high level of insulation**
- **Insulation below roof deck**
- **Window overhangs and/or fins**

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 components tables below.

Building-level Verifications:
- **High quality insulation installation (QII)**
- **IAQ mechanical ventilation**

Cooling System Verifications:
- **-- None --**

HVAC Distribution System Verifications:
- **Duct Sealing**
- **Low-leakage Air Handling Unit**

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
Building 200	7928	4	14	1	0	4

ZONE INFORMATION

01	02	03	04	05
Zone Name	Zone Type	Zone Floor Area (ft^2)	Avg. Ceiling Height	Number of Dwelling Units
Zone 1	Conditioned	7928	9	4

DWELLING UNIT INFORMATION

01	02	03
Dwelling Unit Name	Dwelling Unit Type	Zone
DDU-1 Unit 3R -(1/1)	DU-1 Unit 3R	Zone 1
DDU-2 Unit 3X-(1/1)	DU-2 Unit 3X	Zone 1
DDU-3 Unit 1-(1/2)	DU-3 Unit 1	Zone 1
DDU-3 Unit 1-(2/2)	DU-3 Unit 1	Zone 1

DWELLING UNIT TYPES

01	02	03	04	05	06	07
Name	CFA (ft^2)	Number of Bedrooms	Number in Building	Space Conditioning Systems Assigned	DHW System Name	IAQ Vent Fan Name
DU-1 Unit 3R	2098	4	1	DDU-1 Unit 3R | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-2 Unit 3X	2142	4	1	DDU-2 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan
DU-3 Unit 1	1844	3	2	DDU-3 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3 DDU-3 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	DHW Sys 1	Default Minimum IAQ Fan

OPAQUE SURFACES

01	02	03	04	05	06	07	08
Name	Zone	Construction	Azimuth	Orientation	Gross Area (ft^2)	Window & Door Area (ft^2)	Tilt (deg)
Front Wall	Zone 1	R-15 Wall	135	Front	684	172	90
Front 2x6 Wall	Zone 1	R-21 Wall	135	Front	98.6	0	90
Left Wall	Zone 1	R-15 Wall	225	Left	191.6	41	90
Rear Wall	Zone 1	R-15 Wall	315	Back	27.3	0	90
Right Wall	Zone 1	R-15 Wall	45	Right	191.9	12.3	90
Front Wall 2	Zone 1	R-15 Wall	135	Front	418.6	151	90
Front 2x6 Wall 2	Zone 1	R-21 Wall	135	Front	379.9	128	90
Left Wall 2	Zone 1	R-15 Wall	225	Left	279.1	65	90
Left 2x6 Wall	Zone 1	R-21 Wall	225	Left	118.3	0	90
Rear Wall 2	Zone 1	R-15 Wall	315	Back	683.3	16	90
Rear 2x6 Wall	Zone 1	R-21 Wall	135	Front	115.3	60	90
Right Wall 2	Zone 1	R-15 Wall	45	Right	279.1	60.5	90
Right 2x6 Wall	Zone 1	R-21 Wall	45	Right	118.3	13.5	90
Front Wall 3	Zone 1	R-15 Wall	135	Front	723.5	146	90
Front 2x6 Wall 3	Zone 1	R-21 Wall	135	Front	75.1	16	90
Left Wall 3	Zone 1	R-15 Wall	225	Left	290.4	6	90
Left 2x6 Wall 2	Zone 1	R-21 Wall	225	Left	106.9	31	90
Rear Wall 3	Zone 1	R-21 Wall	315	Back	799.9	113	90
Right Wall 3	Zone 1	R-15 Wall	45	Right	290.4	37	90
Right 2x6 Wall 2	Zone 1	R-21 Wall	45	Right	106.9	0	90
Left Interior Surface	Zone 1>>__Garage__	Garage R-15	n/a	n/a	50.1	0	n/a
Rear Interior Surface	Zone 1>>__Garage__	Garage R-15	n/a	n/a	601.3	71.1	n/a
Rear 2x6 Interior Surfac	Zone 1>>__Garage__	Garage R-21	n/a	n/a	151.7	0	n/a
Right Interior Surface	Zone 1>>__Garage__	Garage R-15	n/a	n/a	50	0	n/a
Roof	Zone 1	R-49 Roof Attic+R-15	n/a	n/a	3341	n/a	n/a
Interior Surface	Zone 1>>__Garage__	R-19 Floor No Crawlspace	n/a	n/a	1842	n/a	n/a
Interior Surface 2	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	1525	n/a	n/a
Interior Surface 3	Zone 1>>Zone 1	R-19 Floor No Crawlspace	n/a	n/a	3066	n/a	n/a
Front Wall 4	__Garage__	R-0 Wall	135	Front	45.5	0	90
Left Wall 4	__Garage__	R-0 Wall	225	Left	187.3	0	90

Rear Wall 4	__Garage__	R-0 Wall	315	Back	799.9	448	90
Right Wall 4	__Garage__	R-0 Wall	45	Right	187.3	0	90

ATTIC

01	02	03	04	05	06	07	08
Name	Construction	Type	Roof Rise	Roof Reflectance	Roof Emittance	Radiant Barrier	Cool Roof
Attic Zone 1	Attic RoofZone 1	Ventilated	5	0.15	0.8	No	No

FENESTRATION / GLAZING

01	02	03	04	05	06	07	08	09	10
Name	Type	Surface (Orientation-Azimuth)	Width (ft)	Height (ft)	Multiplier	Area (ft^2)	U-factor	SHGC	Exterior Shading
Window OH	Window	Front Wall (Front-135)	20.0	5.0	1	100.0	0.30	0.23	Insect Screen (default)
Window	Window	Left Wall (Left-225)	----	----	1	17.0	0.30	0.23	Insect Screen (default)
Window 2	Window	Right Wall (Right-45)	----	----	1	12.3	0.30	0.23	Insect Screen (default)
Window 3	Window	Front Wall 2 (Front-135)	----	----	1	151.0	0.30	0.23	Insect Screen (default)
Window 4	Window	Front 2x6 Wall 2 (Front-135)	----	----	1	128.0	0.30	0.23	Insect Screen (default)
Window 5	Window	Left Wall 2 (Left-225)	----	----	1	65.0	0.30	0.23	Insect Screen (default)
Window 6	Window	Rear Wall 2 (Back-315)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 7	Window	Rear 2x6 Wall (Front-135)	----	----	1	60.0	0.30	0.23	Insect Screen (default)
Window 8	Window	Right Wall 2 (Right-45)	----	----	1	60.5	0.30	0.23	Insect Screen (default)
Window 9	Window	Right 2x6 Wall (Right-45)	----	----	1	13.5	0.30	0.23	Insect Screen (default)
Window 10	Window	Front Wall 3 (Front-135)	----	----	1	146.0	0.30	0.23	Insect Screen (default)
Window 11	Window	Front 2x6 Wall 3 (Front-135)	----	----	1	16.0	0.30	0.23	Insect Screen (default)
Window 12	Window	Left Wall 3 (Left-225)	----	----	1	6.0	0.30	0.23	Insect Screen (default)
Window 13	Window	Left 2x6 Wall 2 (Left-225)	----	----	1	31.0	0.30	0.23	Insect Screen (default)
Window 14	Window	Rear Wall 3 (Back-315)	----	----	1	113.0	0.30	0.23	Insect Screen (default)
Window 15	Window	Right Wall 3 (Right-45)	----	----	1	37.0	0.30	0.23	Insect Screen (default)

OPAQUE DOORS

01	02	03	04
Name	Side of Building	Area (ft^2)	U-factor
Door	Front Wall	72.0	0.50
Door 2	Left Wall	24.0	0.50
Door 3	Rear Interior Surface	71.1	0.50
Door 4	Rear Wall 4	448.0	1.00

OVERHANGS AND FINS

01	02	03	04	05	06	07	08	09	10	11	12	13	14
	Overhang					Left Fin				Right Fin			
Window	Depth	Dist Up	Left Extent	Right Extent	Flap Ht.	Depth	Top Up	Dist L	Bot Up	Depth	Top Up	Dist R	Bot Up
Window OH	6	1	2	2	0	0	0	0	0	0	0	0	0

OPAQUE SURFACE CONSTRUCTIONS

01	02	03	04	05	06	07
Construction Name	Surface Type	Construction Type	Framing	Total Cavity R-value	Winter Design U-factor	Assembly Layers
R-0 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 13	0.101	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-13 / 2x4* • *Exterior Finish: 3 Coat Stucco*
Attic RoofZone 1	Attic Roofs	Wood Framed Ceiling	2x4 Top Chord of Roof Truss @ 24 in. O.C.	R 15	0.065	• *Around Roof Joists: R-2.0 insul.* • *Cavity / Frame: R-13.0 / 2x4 Top Chrd* • *Roof Deck: Wood Siding/sheathing/decking* • *Tile Gap: present* • *Roofing: 10 PSF (RoofTile)*
R-15 Wall	Exterior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.095	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Exterior Finish: 3 Coat Stucco*
R-21 Wall	Exterior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.069	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x6* • *Exterior Finish: 3 Coat Stucco*
Garage R-15	Interior Walls	Wood Framed Wall	2x4 @ 16 in. O.C.	R 15	0.086	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-15 / 2x4* • *Other Side Finish: Gypsum Board*
Garage R-21	Interior Walls	Wood Framed Wall	2x6 @ 16 in. O.C.	R 21	0.064	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-21 / 2x6* • *Other Side Finish: Gypsum Board*
R-19 Floor No Crawlspace	Interior Floors	Wood Framed Floor	2x12 @ 16 in. O.C.	none	0.196	• *Floor Surface: Carpeted* • *Floor Deck: Wood Siding/sheathing/decking* • *Cavity / Frame: no insul. / 2x12* • *Ceiling Below Finish: Gypsum Board*
R-49 Roof Attic+R-15	Ceilings (below attic)	Wood Framed Ceiling	2x4 @ 16 in. O.C.	R 49	0.020	• *Inside Finish: Gypsum Board* • *Cavity / Frame: R-9.1 / 2x4* • *Over Ceiling Joists: R-39.9 insul.*

SLAB FLOORS

01	02	03	04	05	06	07
Name	Zone	Area (ft^2)	Perimeter (ft)	Edge Insul. R-value & Depth	Carpeted Fraction	Heated
Slab-on-Grade	Zone 1	1499	131	None	0.8	No
Slab-on-Grade 2	__Garage__	1847	266	None	0	No

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
Name	System Type	Number of Systems in Building	Multi-Family Distribution Type	Water Heater	Number of Water Heaters/System	Solar Fraction (%)
DHW Sys 1	Standard	4	Multi-family: No loops or recirc pump	DHW Heater 1 (1)	1	0

WATER HEATING SYSTEMS					
01	02	03	04	05	06
Name	System Type	Distribution Type	Water Heater	Number of Heaters	Solar Fraction (%)
DHW Sys 1			DHW Heater 1 (1)	1	.0%

WATER HEATERS											
01	02	03	04	05	06	07	08	09	10	11	12
Name	Heater Element Type	Tank Type	Number of Units	Tank Volume (gal)	Uniform Energy Factor / Energy Factor / Efficiency	Input Rating / Pilot / Thermal Efficiency	Tank Insulation R-value (Int/Ext)	Standby Loss / Recovery Eff	First Hour Rating / Flow Rate	NEEA Heat Pump Brand / Model	Tank Location or Ambient Condition
DHW Heater 1	Gas	Small Instantaneous	1	0	0.92 EF	199,000 Btu/hr	0	n/a	n/a	n/a	n/a

SPACE CONDITIONING SYSTEMS

01	02	03	04	05	06
SC Sys Name	System Type	Heating Unit Name	Cooling Unit Name	Fan Name	Distribution Name
DDU-1 Unit 3R | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-2 Unit 3X | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-3 Unit 1 1/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1
DDU-3 Unit 1 2/2 | Cooling Component 1:Heating Component 1:Air Distribution System 1:HVAC Fan 1:1:3	Other Heating and Cooling System	Heating Component 1	Cooling Component 1	HVAC Fan 1	Air Distribution System 1

HVAC - HEATING UNIT TYPES

01	02	03	04
Name	System Type	Number of Units	Efficiency
Heating Component 1	CntrlFurnace - Fuel-fired central furnace	4	92 AFUE

HVAC - COOLING UNIT TYPES

01	02	03	04	05	06	07	08
Name	System Type	Number of Units	Efficiency EER	Efficiency SEER	Zonally Controlled	Multi-speed Compressor	HERS Verification
Cooling Component 1	SplitAirCond - Split air conditioning system	4	13	16	No	No	Cooling Component 1-hers-cool

HVAC COOLING - HERS VERIFICATION

01	02	03	04	05	06
Name	Verified Airflow	Airflow Target (CFM)	Verified EER	Verified SEER	Verified Refrigerant Charge
Cooling Component 1-hers-cool	Required	350	Required	Required	Required

HVAC - DISTRIBUTION SYSTEMS

01	02	03	04	05	06	07
Name	Type	Duct Leakage	Insulation R-value	Duct Location	Bypass Duct	HERS Verification
Air Distribution System 1	DuctsAttic	Specified Lower Leakage Target	6	Attic	None	Air Distribution System 1-hers-dist

HVAC DISTRIBUTION - HERS VERIFICATION

01	02	03	04	05	06	07	08
Name	Duct Leakage Verification	Duct Leakage Target (%)	Verified Duct Location	Verified Duct Design	Buried Ducts	Deeply Buried Ducts	Low-leakage Air Handler
Air Distribution System 1-hers-dist	Required	5.0	Not Required	Not Required	Not Required	Not Required	Required

HVAC - FAN SYSTEMS

01	02	03	04
Name	Type	Fan Power (Watts/CFM)	HERS Verification
HVAC Fan 1	Single Speed PSC Furnace Fan	0.58	HVAC Fan 1-hers-fan

HVAC FAN SYSTEMS - HERS VERIFICATION

01	02	03
Name	Verified Fan Watt Draw	Required Fan Efficiency (Watts/CFM)
HVAC Fan 1-hers-fan	Required	0.58

IAQ (Indoor Air Quality) FANS

01	02	03	04	05	06
Dwelling Unit	IAQ CFM	IAQ Watts/CFM	IAQ Fan Type	IAQ Recovery Effectiveness(%)	HERS Verification
DDU-1 Unit 3R 1/1	100	0.25	Default	0	Required
DDU-2 Unit 3X 1/1	102	0.25	Default	0	Required
DDU-3 Unit 1 1/2	85	0.25	Default	0	Required

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Cristela Lujan	Documentation Author Signature: Cristela Lujan
Company: Energy Inspectors	Signature Date: 2018-07-24 12:56:19
Address: 2570 South Miller Lane	CEA/HERS Certification Identification (If applicable): NA
City/State/Zip: Las Vegas, NV 89117	Phone: 702-365-8080

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: Mitu Walia	Responsible Designer Signature: Mitu Walia
Company: Lennar Homes - San Ramon	Date Signed: 2018-07-24 13:58:51
Address: 2603 camino ramon Suite 525	License: NA
City/State/Zip: San Ramon, CA 94583	Phone: 925-327-8334

Digitally signed by CalCERTS. 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.

Easy to Verify at CalCERTS.com

2016 Code Analysis

Auburn Grove — Lennar

Livermore
Climate Zone: 12

11/17/2017
EnergyPro 7.2

Plan	2016 Code Title-24					
	Building 100 & 100-R	Building 200	Building 200-R	Building 300	Building 300-R	Building 400
Options	NE Orienation	NW Orientation	SE Orientation	SW Orientation	NE Orienation	NW Orientation
Number of Stories	2	3	3	3	3	3
Number of Units	4	4	4	5	5	6
Square Footage	6,779	7,923	7,923	10,070	10,070	12,112
Glazing Percentage	13.8%	12.1%	12.1%	12.0%	12.0%	11.7%
Percentage Above T-24	2.2%	0.9%	1.0%	0.9%	4.1%	0.6%
Insulation - Minimum Values						
Exterior Wall Continuous Insulation	--	--	--	--	--	--
2x4 Wall Cavity Ins (Exterior & Garage)	R-15	R-15	R-15	R-15	R-15	R-15
2x6 Wall Cavity Ins (Exterior & Garage)	R-21	R-21	R-21	R-21	R-21	R-21
Frame Floor Insulation	R-19	R-19	R-19	R-19	R-19	R-19
Attic Insulation	R-49 + R-15	R-49 + R-15	R-49 + R-15	R-49 + R-15	R-49 + R-15	R-49 + R-15
Attic Insulation (At Furnace)	--	--	--	--	--	--
Radiant Barrier	--	--	--	--	--	--
Roofing Products						
Roof Type	Attic	Attic	Attic	Attic	Attic	Attic
Material/Weight	Concrete Tile	Concrete Tile	Concrete Tile	Concrete Tile	Concrete Tile	Concrete Tile
Slope	5:12	5:12	5:12	5:12	5:12	5:12
Aged Solar Reflectance	0.15	0.15	0.15	0.15	0.15	0.15
Aged Solar Emmitance	0.8	0.8	0.8	0.8	0.8	0.8
HVAC - Minimum Efficiencies* **						
Number of HVAC Systems	4	4	4	5	5	6
Zoned HVAC	--	--	--	--	--	--
Minimum Airflow for Zoned System	--	--	--	--	--	--
AFUE/HSPF/COP (Furnace/Heat Pump)	92.0	92.0	92.0	92.0	92.0	92.0
SEER (AC Unit)	16.0	16.0	16.0	16.0	16.0	16.0
EER (AC Unit)	13.0	13.0	13.0	13.0	13.0	13.0
Duct Insulation	R-6	R-6	R-6	R-6	R-6	R-6
Whole House Fan (CFM/watts)	--	--	--	--	--	--
HERS Testing						
Mandatory Testing*	Yes	Yes	Yes	Yes	Yes	Yes
Low Leakage Air Handler	Yes	Yes	Yes	Yes	Yes	Yes
Ducts in Conditioned Space	--	--	--	--	--	--
Verified Refrigerant Charge/CID	Yes	Yes	Yes	Yes	Yes	Yes
SEER Verification**	Yes	Yes	Yes	Yes	Yes	Yes
EER Verification	Yes	Yes	Yes	Yes	Yes	Yes
Quality Insulation Inspection (QII)	Yes	Yes	Yes	Yes	Yes	Yes
Air Infiltration (Blower Door)	--	--	--	--	--	--
ACH @ 50Pa	--	--	--	--	--	--
CFM @ 50Pa	--	--	--	--	--	--
Blower Door Sampling for Energy Star	--	--	--	--	--	--
Verified DHW Distribution	--	--	--	--	--	--
Domestic Hot Water Heating						
Fuel Type	Gas (x4)	Gas (x4)	Gas (x4)	Gas (x5)	Gas (x5)	Gas (x6)
Water Heater Energy Factor	0.92	0.92	0.92	0.92	0.92	0.92
Recovery Efficiency	0.92	0.92	0.92	0.92	0.92	0.92
Tank Capacity (Gallons)	Tankless	Tankless	Tankless	Tankless	Tankless	Tankless
Pipe Insulation/Distribution	Standard	Standard	Standard	Standard	Standard	Standard
Fenestration Values - Typical for All Plans						
	U/SHGC	U/SHGC	U/SHGC	U/SHGC	U/SHGC	U/SHGC
Operable	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23
Fixed	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23
Sliding Glass Door	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23
French Door	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23
Renewables						
Solar Ready Zone Compliance Method						
Solar Space Heating (Net Solar Fraction)						
Solar DHW (Net Solar Fraction)						
Electricity Production: DC Rating (kW)						
Utility Incentive						
North EDR Score/Incentive						
East EDR Score/Incentive						
South EDR Score/Incentive						
West EDR Score/Incentive						

Green Program Participation

- ☐ Build It Green
- ☐ Energy Star V 3.1
- ☐ CalGreen
- ☐ California Advanced Homes Program
- ☐ New Solar Homes Program (standard)
- ☐ New Solar Homes Program (optional)
- ☐ LEED
- ☐ EPA Indoor AirPlus
- ☐ EPA WaterSense

Features approved by: _____ **Date:** _____

Notes & Legend

*Mandatory Testing consists of the following: Duct Test, Verified Cooling Coil Airflow, Fan Watt Verification & HERS Verified Mechanical Ventilation

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-Upgraded Feature Over Existing

EDR Scores are estimate and should be recalculated once TRC releases calculation method.
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Kickers: HPA $200, HPW $200, WHF $100. Amounts not included on shown EDR Scores

Revisions Log

2016 Code Analysis

Auburn Grove | **Lennar**

ENERGY INSPECTORS

11/17/2017

EnergyPro 7.2

Livermore
Climate Zone: 12

Plan	2016 Code Title-24		
	Building 400-R	**Building 500**	**Building 500-R**
Options	SE Orientation	NW Orientation	SE Orientation
Number of Stories	3	3	3
Number of Bedrooms	6	7	7
Square Footage	12,112	14,259	14,259
Glazing Percentage	11.7%	10.5%	10.5%
Percentage Above T-24	**1.3%**	**4.1%**	**5.1%**
Insulation - Minimum Values			
Exterior Wall Continuous Insulation	--	--	--
2x4 Wall Cavity Ins (Exterior & Garage)	R-15	R-15	R-15
2x6 Wall Cavity Ins (Exterior & Garage)	R-21	R-21	R-21
Frame Floor Insulation	R-19	R-19	R-19
Attic Insulation	R-49 + R-15	R-49 + R-15	R-49 + R-15
Attic Insulation (At Furnace)	--	--	--
Radiant Barrier	--	--	--
Roofing Products			
Roof Type	Attic	Attic	Attic
Material/Weight	Concrete Tile	Concrete Tile	Concrete Tile
Slope	5:12	5:12	5:12
Aged Solar Reflectance	0.15	0.15	0.15
Aged Solar Emmitance	0.8	0.8	0.8
HVAC - Minimum Efficiencies* **			
Number of HVAC Systems	6	7	7
Zoned HVAC	--	--	--
Minimum Airflow for Zoned System	--	--	--
AFUE/HSPF/COP (Furnace/Heat Pump)	92.0	92.0	92.0
SEER (AC Unit)	**16.0**	**16.0**	**16.0**
EER (AC Unit)	**13.0**	**13.0**	**13.0**
Duct Insulation	R-6	R-6	R-6
Whole House Fan (CFM/watts)	--	--	--
HERS Testing			
Mandatory Testing*	Yes	Yes	Yes
Low Leakage Air Handler	Yes	Yes	Yes
Ducts in Conditioned Space	--	--	--
Verified Refrigerant Charge/CID	Yes	Yes	Yes
SEER Verification**	Yes	Yes	Yes
EER Verification	Yes	Yes	Yes
Quality Insulation Inspection (QII)	Yes	Yes	Yes
Air Infiltration (Blower Door)	--	--	--
ACH @ 50Pa	--	--	--
CFM @ 50Pa	--	--	--
Blower Door Sampling for Energy Star	--	--	--
Verified DHW Distribution	--	--	--
Domestic Hot Water Heating			
Fuel Type	Gas (x6)	Gas (x7)	Gas (x7)
Water Heater Energy Factor	0.92	0.92	0.92
Recovery Efficiency	0.92	0.92	0.92
Tank Capacity (Gallons)	Tankless	Tankless	Tankless
Pipe Insulation/Distribution	Standard	Standard	Standard
Fenestration Values - Typical for All Plans			
	U/SHGC	**U/SHGC**	**U/SHGC**
Operable	0.30/0.23	0.30/0.23	0.30/0.23
Fixed	0.30/0.23	0.30/0.23	0.30/0.23
Sliding Glass Door	0.30/0.23	0.30/0.23	0.30/0.23
French Door	0.30/0.23	0.30/0.23	0.30/0.23
Renewables			
Solar Ready Zone Compliance Method			
Solar Space Heating (Net Solar Fraction)			
Solar DHW (Net Solar Fraction)			
Electricity Production: DC Rating (kW)			
Utility Incentive			
North EDR Score/Incentive			
East EDR Score/Incentive			
South EDR Score/Incentive			
West EDR Score/Incentive			

Green Program Participation

- ☐ Build It Green
- ☐ Energy Star V 3.1
- ☐ CalGreen
- ☐ California Advanced Homes Program
- ☐ New Solar Homes Program (standard)
- ☐ New Solar Homes Program (optional)
- ☐ LEED
- ☐ EPA Indoor AirPlus
- ☐ EPA WaterSense

Features approved by: _____ **Date:** _____

Notes & Legend

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Revisions Log

2016 Code Analysis

Auburn Grove | **Lennar**

ENERGY INSPECTORS

7/24/2018

Livermore
Climate Zone: 12

EnergyPro 7.2

Plan	2016 Code Title-24					
	Building 100 & 100-R	Building 200	Building 200-R	Building 300	Building 300-R	Building 400
Options	NE Orienation	NW Orientation	SE Orientation	SW Orientation	NE Orienation	NW Orientation
Number of Stories	2	3	3	3	3	3
Number of Units	4	4	4	5	5	6
Square Footage	6,771	7,928	7,928	10,091	10,091	12,133
Glazing Percentage	13.6%	12.3%	12.3%	11.9%	11.9%	11.5%
Percentage Above T-24	2.0%	1.0%	1.0%	0.7%	4.0%	0.5%
Insulation - Minimum Values						
Exterior Wall Continuous Insulation	--	--	--	--	--	--
2x4 Wall Cavity Ins (Exterior & Garage)	R-15	R-15	R-15	R-15	R-15	R-15
2x6 Wall Cavity Ins (Exterior & Garage)	R-21	R-21	R-21	R-21	R-21	R-21
Frame Floor Insulation	R-19	R-19	R-19	R-19	R-19	R-19
Attic Insulation	R-49 + R-15	R-49 + R-15	R-49 + R-15	R-49 + R-15	R-49 + R-15	R-49 + R-15
Attic Insulation (At Furnace)	--	--	--	--	--	--
Radiant Barrier	--	--	--	--	--	--
Roofing Products						
Roof Type	Attic	Attic	Attic	Attic	Attic	Attic
Material/Weight	Concrete Tile	Concrete Tile	Concrete Tile	Concrete Tile	Concrete Tile	Concrete Tile
Slope	5:12	5:12	5:12	5:12	5:12	5:12
Aged Solar Reflectance	0.15	0.15	0.15	0.15	0.15	0.15
Aged Solar Emmitance	0.8	0.8	0.8	0.8	0.8	0.8
HVAC - Minimum Efficiencies* **						
Number of HVAC Systems	4	4	4	5	5	6
Zoned HVAC	--	--	--	--	--	--
Minimum Airflow for Zoned System	--	--	--	--	--	--
AFUE/HSPF/COP (Furnace/Heat Pump)	92.0	92.0	92.0	92.0	92.0	92.0
SEER (AC Unit)	16.0	16.0	16.0	16.0	16.0	16.0
EER (AC Unit)	13.0	13.0	13.0	13.0	13.0	13.0
Duct Insulation	R-6	R-6	R-6	R-6	R-6	R-6
Whole House Fan (CFM/watts)	--	--	--	--	--	--
HERS Testing						
Mandatory Testing*	Yes	Yes	Yes	Yes	Yes	Yes
Low Leakage Air Handler	Yes	Yes	Yes	Yes	Yes	Yes
Ducts in Conditioned Space	--	--	--	--	--	--
Verified Refrigerant Charge/CID	Yes	Yes	Yes	Yes	Yes	Yes
SEER Verification**	Yes	Yes	Yes	Yes	Yes	Yes
EER Verification	Yes	Yes	Yes	Yes	Yes	Yes
Quality Insulation Inspection (QII)	Yes	Yes	Yes	Yes	Yes	Yes
Air Infiltration (Blower Door)	--	--	--	--	--	--
ACH @ 50Pa	--	--	--	--	--	--
CFM @ 50Pa	--	--	--	--	--	--
Blower Door Sampling for Energy Star	--	--	--	--	--	--
Verified DHW Distribution	--	--	--	--	--	--
Domestic Hot Water Heating						
Fuel Type	Gas (x4)	Gas (x4)	Gas (x4)	Gas (x5)	Gas (x5)	Gas (x6)
Water Heater Energy Factor	0.92	0.92	0.92	0.92	0.92	0.92
Recovery Efficiency	0.92	0.92	0.92	0.92	0.92	0.92
Tank Capacity (Gallons)	Tankless	Tankless	Tankless	Tankless	Tankless	Tankless
Pipe Insulation/Distribution	Standard	Standard	Standard	Standard	Standard	Standard
Fenestration Values - Typical for All Plans						
	U/SHGC	U/SHGC	U/SHGC	U/SHGC	U/SHGC	U/SHGC
Operable	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23
Fixed	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23
Sliding Glass Door	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23
French Door	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23	0.30/0.23
Renewables						
Solar Ready Zone Compliance Method						
Solar Space Heating (Net Solar Fraction)						
Solar DHW (Net Solar Fraction)						
Electricity Production: DC Rating (kW)						
Utility Incentive						
North EDR Score/Incentive						
East EDR Score/Incentive						
South EDR Score/Incentive						
West EDR Score/Incentive						

Green Program Participation

- ☐ Build It Green
- ☐ Energy Star V 3.1
- ☐ CalGreen
- ☐ California Advanced Homes Program
- ☐ New Solar Homes Program (standard)
- ☐ New Solar Homes Program (optional)
- ☐ LEED
- ☐ EPA Indoor AirPlus
- ☐ EPA WaterSense

Features approved by: _____ **Date:** _____

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Revisions Log

2016 Code Analysis

Auburn Grove | **Lennar**

ENERGY INSPECTORS

7/24/2018

EnergyPro 7.2

Livermore
Climate Zone: 12

Plan	Building 400-R	Building 500	Building 500-R
	2016 Code Title-24		
Options	SE Orientation	NW Oriention	SE Orientation
Number of Stories	3	3	3
Number of Bedrooms	6	7	7
Square Footage	12,133	14,226	14,226
Glazing Percentage	11.5%	11.2%	11.2%
Percentage Above T-24	**1.3%**	**4.3%**	**5.3%**
Insulation - Minimum Values			
Exterior Wall Continuous Insulation	--	--	--
2x4 Wall Cavity Ins (Exterior & Garage)	R-15	R-15	R-15
2x6 Wall Cavity Ins (Exterior & Garage)	R-21	R-21	R-21
Frame Floor Insulation	R-19	R-19	R-19
Attic Insulation	R-49 + R-15	R-49 + R-15	R-49 + R-15
Attic Insulation (At Furnace)	--	--	--
Radiant Barrier	--	--	--
Roofing Products			
Roof Type	Attic	Attic	Attic
Material/Weight	Concrete Tile	Concrete Tile	Concrete Tile
Slope	5:12	5:12	5:12
Aged Solar Reflectance	0.15	0.15	0.15
Aged Solar Emmitance	0.8	0.8	0.8
HVAC - Minimum Efficiencies* **			
Number of HVAC Systems	6	7	7
Zoned HVAC	--	--	--
Minimum Airflow for Zoned System	--	--	--
AFUE/HSPF/COP (Furnace/Heat Pump)	92.0	92.0	92.0
SEER (AC Unit)	**16.0**	**16.0**	**16.0**
EER (AC Unit)	**13.0**	**13.0**	**13.0**
Duct Insulation	R-6	R-6	R-6
Whole House Fan (CFM/watts)	--	--	--
HERS Testing			
Mandatory Testing*	Yes	Yes	Yes
Low Leakage Air Handler	Yes	Yes	Yes
Ducts in Conditioned Space	--	--	--
Verified Refrigerant Charge/CID	Yes	Yes	Yes
SEER Verification**	Yes	Yes	Yes
EER Verification	Yes	Yes	Yes
Quality Insulation Inspection (QII)	Yes	Yes	Yes
Air Infiltration (Blower Door)	--	--	--
ACH @ 50Pa	--	--	--
CFM @ 50Pa	--	--	--
Blower Door Sampling for Energy Star	--	--	--
Verified DHW Distribution	--	--	--
Domestic Hot Water Heating			
Fuel Type	Gas (x6)	Gas (x7)	Gas (x7)
Water Heater Energy Factor	0.92	0.92	0.92
Recovery Efficiency	0.92	0.92	0.92
Tank Capacity (Gallons)	Tankless	Tankless	Tankless
Pipe Insulation/Distribution	Standard	Standard	Standard
Fenestration Values - Typical for All Plans			
	U/SHGC	**U/SHGC**	**U/SHGC**
Operable	0.30/0.23	0.30/0.23	0.30/0.23
Fixed	0.30/0.23	0.30/0.23	0.30/0.23
Sliding Glass Door	0.30/0.23	0.30/0.23	0.30/0.23
French Door	0.30/0.23	0.30/0.23	0.30/0.23
Renewables			
Solar Ready Zone Compliance Method			
Solar Space Heating (Net Solar Fraction)			
Solar DHW (Net Solar Fraction)			
Electricity Production: DC Rating (kW)			
Utility Incentive			
North EDR Score/Incentive			
East EDR Score/Incentive			
South EDR Score/Incentive			
West EDR Score/Incentive			

Green Program Participation

- ☐ Build It Green
- ☐ Energy Star V 3.1
- ☐ CalGreen
- ☐ California Advanced Homes Program
- ☐ New Solar Homes Program (standard)
- ☐ New Solar Homes Program (optional)
- ☐ LEED
- ☐ EPA Indoor AirPlus
- ☐ EPA WaterSense

Features approved by: _____ **Date:** _____

Notes & Legend

*Mandatory Testing consists of the following: Duct Test, Verified Cooling Coil Airflow, Fan Watt Verification & HERS Verified Mechanical Ventilation

**SEER Verification is Mandatory for equipment above federal minimum standard

***HVAC Values represent code minimums, refer to Mechanical Documents for actual efficiencies.

-Upgraded Feature Over Existing

EDR Scores are estimate and should be recalculated once TRC releases calculation method.
The shown EDR scores already include 2 points for All ENERGY STAR appliances & 1 point for 100%LED
Kickers: HPA $200, HPW $200, WHF $100. Amounts not included on shown EDR Scores

Revisions Log