BUILDING ENERGY ANALYSIS REPORT

PROJECT:

90 Apartment Units - Building 01
3955 Coffee Road
Modesto, CA 95355

Project Designer:

Report Prepared by:

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Job Number:

199

Date:

5/22/2023

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A. General Information					
1	Project Name	90 Apartment Units - Building 01			
2	Run Title	Title 24 Analysis			
3	Project Location	3955 Coffee Road			
4	City	Modesto	5	Standards Version	Compliance 2022
6	Zip code	95355	7	Compliance Software (version)	EnergyPro 9.1
8	Climate Zone	12	9	Building Orientation (deg)	0
10	Building Type(s)	• Nonresidential	11	Weather File	MODESTO-CITY_STYP20.epw
12	Project Scope	• New complete scope	13	Number of Dwelling Units	36
14	Total Conditioned Floor Area in Scope (ft^2)	32981.3	15	Total # of hotel/motel rooms	0
16	Total Unconditioned Floor Area (ft^2)	6246	17	Fuel Type	Natural gas
18	Nonresidential Conditioned Floor Area	0	19	Total # of Stories (Habitable Above Grade)	3
20	Residential Conditioned Floor Area	32981.3			

B. PROJECT SUMMARY

Table B shows which building components are included in the performance calculation. If indicated as not included, the project must show compliance prescriptively if within the permit application.

Building Components Complying via Performance						Building Components Complying Prescriptively	
Envelope (See Table G)	Nonres	Not Included	Solar Thermal Water Heating (See Table I3)	☐	Performance	The following building components are ONLY eligible for prescriptive compliance and should be documented on the LMCC form listed if within the scope of the permit application (i.e. compliance will not be shown on the LMCC-PRF-E).	
	MultiFam	Performance		☒	Not Included		
Mechanical (See Table H)	Nonres	Not Included	Covered Process: Commercial Kitchens (see Table J)	☐	Performance	Indoor Lighting (Unconditioned) 140.6 & 170.2(e)	LMCC-LTI-01E is required
	MultiFam	Performance		☒	Not Included	Outdoor Lighting 140.7 & 170.2(e)	LMCC-LTO-01E is required
Domestic Hot Water (See Table I)	Nonres	Not Included	Covered Process: Laboratory Exhaust (see Table J)	☐	Performance	Sign Lighting 140.8 & 170.2(e)	LMCC-LTS-01E is required
	MultiFam	Performance		☒	Not Included	**Building Components Complying with Mandatory Measures**	
Lighting (Indoor Conditioned, see Table K)	Nonres	Not Included	Photovoltaics (see Table F)	☒	Performance	Electrical power systems, commissioning, solar ready, elevator and escalator requirements are mandatory and should be documented on the LMCC form listed if applicable (i.e. compliance will not be shown on the LMCC-PRF-E.)	
	MultiFam	Performance		☐	Not Included	Electrical Power Distribution 110.11	LMCC-ELC-01E is required
			Battery (see Table F)	☐	Performance	Commissioning 120.8	LMCC-CXR-01E is required
				☒	Not Included	Solar and Battery 110.10	LMCC-SAB-01E is required

C1. COMPLIANCE SUMMARY

COMPLIES[3]

	Time Dependent Valuation (TDV)		Source Energy Use
	Efficiency[1] (kBtu/ft² - yr)	**Total[2] (kBtu/ft² - yr)**	**Total[2] (kBtu/ft² - yr)**
Standard Design	97.16	31.22	5.55
Proposed Design	94.09	26.16	5.53
Compliance Margins	**3.07**	**5.06**	**0.02**
	Pass	**Pass**	**Pass**

[1] Efficiency measures include improvements like a better building envelope and more efficient equipment

[2] Compliance Totals include efficiency, photovoltaics and batteries

[3] Building complies when efficiency and total compliance margins are greater than or equal to zero and unmet load hour limits are not exceeded

C2. TDV ENERGY COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual TDV Energy Use, kBtu/ft^2 - yr)

COMPLIES[2]

Energy Component	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV)[1]
Space Heating	0.7	5.29	-4.59
Space Cooling	34.56	31.75	2.81
Indoor Fans	14.55	13.19	1.36
Heat Rejection	0	0	0
Pumps & Misc.	2.17	2.17	0
Domestic Hot Water	27.26	23.77	3.49
Indoor Lighting	17.92	17.92	0
Flexibility	---	---	---
EFFICIENCY COMPLIANCE TOTAL	**97.16**	**94.09**	**3.07 (3.2%)**
Photovoltaics	-65.94	-67.93	1.99
Batteries	---	---	---
TOTAL COMPLIANCE	**31.22**	**26.16**	**5.06 (16.2%)**

[1] *Notes: This number in parenthesis following the Compliance Margin in column 4, represents the Percent Better than Standard.*

C3. TDV ENERGY RESULTS FOR NON-REGULATED COMPONENTS[1]

Non-Regulated Energy Component	Standard Design (TDV)	Proposed Design (TDV)	Compliance Margin (TDV)[1]
Receptacle	49.74	49.74	---
Process	50.63	50.24	0.39
Other Ltg	8.85	8.85	---
Process Motors	---	---	---
TOTAL (TOTAL COMPLIANCE + NON-REGULATED COMPONENTS)	**140.44**	**134.99**	**5.45 (3.9%)**

[1] *Notes: This table is not used for Energy Code Compliance.*

C4. SOURCE ENERGY COMPLIANCE RESULTS FOR PERFORMANCE COMPONENTS (Annual SOURCE Energy Use, kBtu/ft^2 /yr)

COMPLIES[2]

Energy Component	Standard Design (SOURCE)	Proposed Design (SOURCE)	Compliance Margin (SOURCE)[1]
Space Heating	0.09	0.7	-0.61
Space Cooling	1.54	1.31	0.23
Indoor Fans	1.05	1.02	0.03
Heat Rejection	0	0	0
Pumps & Misc.	0.29	0.29	0
Domestic Hot Water	2.68	2.34	0.34
Indoor Lighting	1.67	1.67	0
Flexibility	---	---	---
EFFICIENCY COMPLIANCE TOTAL	**7.32**	**7.33**	**-0.01 (-0.1%)**
Photovoltaics	-1.77	-1.8	0.03
Batteries	---	---	---
TOTAL COMPLIANCE	**5.55**	**5.53**	**0.02 (0.4%)**

[1] *Notes: This number in parenthesis following the Compliance Margin in column 4, represents the Percent Better than Standard.*

C5. SOURCE ENERGY RESULTS FOR NON-REGULATED COMPONENTS[1]

Non-Regulated Energy Component	Standard Design (SOURCE)	Proposed Design (SOURCE)	Compliance Margin (SOURCE)[1]
Receptacle	4.77	4.77	---
Process	4.11	4.07	0.04
Other Ltg	0.88	0.88	---
Process Motors	---	---	---
TOTAL (TOTAL COMPLIANCE + NON-REGULATED COMPONENTS)	**15.31**	**15.25**	**0.06 (0.4%)**

[1] *Notes: This table is not used for Energy Code Compliance.*

C6. 'ABOVE CODE' QUALIFICATIONS

☐ This project is pursuing CalGreen Tier 1 ☐ This project is pursuing CalGreen Tier 2

C7. ENERGY USE SUMMARY

Energy Component	Standard Design Site (MWh)	Proposed Design Site (MWh)	Margin (MWh)	Standard Design Site (MBtu)	Proposed Design Site (MBtu)	Margin (MBtu)
Space Heating	0.8	6	-5.2	---	---	---
Space Cooling	24.1	20.3	3.8	---	---	---
Indoor Fans	14.5	13.4	1.1	---	---	---
Heat Rejection	---	---	---	---	---	---
Pumps & Misc.	2.5	2.5	0	---	---	---
Domestic Hot Water	34.1	30.1	4	---	---	---
Indoor Lighting	21.9	21.9	0	---	---	---
Flexibility	---	---	---	---	---	---
EFFICIENCY TOTAL	**97.9**	**94.2**	**3.7**	**0**	**0**	**0**
Photovoltaics	-111.6	-113.8	2.2	---	---	---
Batteries	---	---	---	---	---	---
ENERGY USE SUBTOTAL	**-13.7**	**-19.6**	**5.9**	**0**	**0**	**0**
Receptacle	58.4	58.4	0	---	---	---
Process	62	61.5	0.5	---	---	---
Other Ltg	9.4	9.4	0	---	---	---
Process Motors	---	---	---	---	---	---
ENERGY USE TOTAL	**116.1**	**109.7**	**6.4**	**0**	**0**	**0**

C8. ENERGY USE INTENSITY (EUI)

	Standard Design (kBtu/ft^2 / yr)	Proposed Design (kBtu/ft^2 / yr)	Margin (kBtu/ft^2 / yr)	Margin Percentage
GROSS EUI[1]	19.81	19.44	0.37	1.87
NET EUI[1]	10.1	9.54	0.56	5.54

[1] *Notes: Gross EUI is Energy Use Total (not including PV)/Total Building Area. Net EUI is Energy Use Total (including PV)/Total Building Area.*

D1. EXCEPTIONAL CONDITIONS

- Required minimum PV capacity limited by SARA.

D2. MULTIFAMILY REQUIRED SPECIAL FEATURES

- Indoor air quality, balanced fan
- Variable capacity heat pump compliance option (verification details from VCHP Staff report, Appendix B, and RA3)
- Northwest Energy Efficiency Alliance (NEEA) rated heat pump water heater; specific brand/model, or equivalent, must be installed

E1. HERS VERIFICATION SUMMARY

The following is a summary of the features that must be field-verified by a certified HERS Rater as a condition for meeting the modeled energy performance for this computer analysis. Additional detail is provided in the building tables below. Registered CF2Rs and CF3Rs are required to be completed in the HERS Registry.

Building-level Verifications:
- Indoor air quality ventilation
- Kitchen range hood

Cooling System Verifications:
- Verified Refrigerant Charge
- Airflow in habitable rooms (SC3.1.4.1.7)
- Minimum Airflow according to RA3.3 and SC3.3.3.4.1

Heating System Verifications:
- Verified heat pump rated heating capacity
- CEC certified low-static VCHP system
- Wall-mounted thermostat in zones greater than 150 ft2 (SC3.4.5)
- Verified air filter sizing (SC3.1.4.7)
- Verified air filter pressure drop rating

HVAC Distribution System Verifications:
- Ducts located entirely in conditioned space confirmed by duct leakage testing
- Verified low-leakage ducts in conditioned space must meet maximum 25 cfm leakage to outside (RA3.1.4.3.8)

Domestic Hot Water System Verifications:
- -- None --

F1. REQUIRED PV SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12
DC System Size (kWdc)	**Exception[1]**	**Module Type**	**Array Type**	**Power Electronics**	**CFI**	**Azimuth (deg)**	**Tilt Input**	**Array Angle (deg)**	**Tilt: (x in 12)**	**Inverter Eff. (%)**	**Annual Solar Access (%)**
69	n/a	Standard (14-17%)	Fixed	none	false	180	Degrees	22	4.85	96	100

[1]*See Table D1 for any PV exceptions used.*

F1B. PV BATTERY BUILDING TYPE(S)

01	02	03
Building Occupancy Type* (From Table 140.10-A/B and 170.2-U/V)	**Conditioned Floor Area (ft^2)**	**Unconditioned Floor Area (ft^2)**
Grocery	0	0
High-Rise Multifamily	0	0
Office, Financial Institutions, Unleased Tenant Space	0	0
Retail	0	0
School	0	0
Warehouse	0	0
Auditorium, Convention Center, Hotel/Motel, Library, Medical Office Building/Clinic, Restaurant, Theater	0	6246
None	0	0

**Building Occupancy Types are defined in Section 100.1 of the Energy Code*

F3. DWELLING UNIT INFORMATION

01	02	03
Dwelling Unit Name	**Dwelling Unit Type**	**Dwelling Unit Type**
DDU-1 FF-01-(1/1)	DU-1 FF-01	S-1-FF-01
DDU-2 FF-02-(1/1)	DU-2 FF-02	S-2-FF-02
DDU-3 FF-03-(1/1)	DU-3 FF-03	S-3-FF-03
DDU-4 FF-04-(1/1)	DU-4 FF-04	S-4-FF-04
DDU-5 FF-05-(1/1)	DU-5 FF-05	S-5-FF-05
DDU-6 FF-06-(1/1)	DU-6 FF-06	S-6-FF-06
DDU-7 FF-07-(1/1)	DU-7 FF-07	S-7-FF-07
DDU-8 FF-09-(1/1)	DU-8 FF-09	S-8-FF-09
DDU-9 FF-10-(1/1)	DU-9 FF-10	S-9-FF-10
DDU-10 FF-12-(1/1)	DU-10 FF-12	S-10-FF-12
DDU-11 FF-08-(1/1)	DU-11 FF-08	S-11-FF-08
DDU-12 FF-11-(1/1)	DU-12 FF-11	S-12-FF-11
DDU-13 2F-01-(1/1)	DU-13 2F-01	S-14-2F-01
DDU-14 2F-02-(1/1)	DU-14 2F-02	S-15-2F-02
DDU-15 2F-03-(1/1)	DU-15 2F-03	S-16-2F-03
DDU-16 2F-04-(1/1)	DU-16 2F-04	S-17-2F-04
DDU-17 2F-05-(1/1)	DU-17 2F-05	S-18-2F-05
DDU-18 2F-06-(1/1)	DU-18 2F-06	S-19-2F-06
DDU-19 2F-07-(1/1)	DU-19 2F-07	S-20-2F-07
DDU-20 2F-09-(1/1)	DU-20 2F-09	S-21-2F-09
DDU-21 2F-10-(1/1)	DU-21 2F-10	S-22-2F-10
DDU-22 2F-12-(1/1)	DU-22 2F-12	S-23-2F-12
DDU-23 2F-08-(1/1)	DU-23 2F-08	S-24-2F-08
DDU-24 2F-11-(1/1)	DU-24 2F-11	S-25-2F-11
DDU-25 3F-01-(1/1)	DU-25 3F-01	S-27-3F-01
DDU-26 3F-02-(1/1)	DU-26 3F-02	S-28-3F-02

F3. DWELLING UNIT INFORMATION

01	02	03
Dwelling Unit Name	**Dwelling Unit Type**	**Dwelling Unit Type**
DDU-27 3F-03-(1/1)	DU-27 3F-03	S-29-3F-03
DDU-28 3F-04-(1/1)	DU-28 3F-04	S-30-3F-04
DDU-29 3F-05-(1/1)	DU-29 3F-05	S-31-3F-05
DDU-30 3F-06-(1/1)	DU-30 3F-06	S-32-3F-06
DDU-31 3F-07-(1/1)	DU-31 3F-07	S-33-3F-07
DDU-32 3F-09-(1/1)	DU-32 3F-09	S-34-3F-09
DDU-33 3F-10-(1/1)	DU-33 3F-10	S-35-3F-10
DDU-34 3F-12-(1/1)	DU-34 3F-12	S-36-3F-12
DDU-35 3F-08-(1/1)	DU-35 3F-08	S-37-3F-08
DDU-36 3F-11-(1/1)	DU-36 3F-11	S-38-3F-11

F4. 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 FF-01	1020.26	2	1	DU-1 FF-01 | :Heat Pump System 1:Air Distribution System 1:HVAC Fan 1:2:3	MF0-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-2 FF-02	925	2	1	DU-2 FF-02 | :Heat Pump System 1:Air Distribution System 1:HVAC Fan 1:2:3	MF0-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-3 FF-03	917.51	2	1	DU-3 FF-03 | :Heat Pump System 1:Air Distribution System 1:HVAC Fan 1:2:3	MF0-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-4 FF-04	917.5	2	1	DU-4 FF-04 | :Heat Pump System 1:Air Distribution System 1:HVAC Fan 1:2:3	MF0-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-5 FF-05	924.5	2	1	DU-5 FF-05 | :Heat Pump System 1:Air Distribution System 1:HVAC Fan 1:2:3	MF0-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-6 FF-06	1027	2	1	DU-6 FF-06 | :Heat Pump System 1:Air Distribution System 1:HVAC Fan 1:2:3	MF0-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-7 FF-07	1022	2	1	DU-7 FF-07 | :Heat Pump System 1:Air Distribution System 1:HVAC Fan 1:2:3	MF0-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan

F4. 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-8 FF-09	925	2	1	DU-8 FF-09 | :Heat Pump System 1:Air Distribution System 1:HVAC Fan 1:2:3	MF0-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-9 FF-10	925	2	1	DU-9 FF-10 | :Heat Pump System 1:Air Distribution System 1:HVAC Fan 1:2:3	MF0-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-10 FF-12	1020	2	1	DU-10 FF-12 | :Heat Pump System 1:Air Distribution System 1:HVAC Fan 1:2:3	MF0-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-11 FF-08	685	1	1	DU-11 FF-08 | :Heat Pump System 2:Air Distribution System 2:HVAC Fan 2:2:3	MF0-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-12 FF-11	685	1	1	DU-12 FF-11 | :Heat Pump System 2:Air Distribution System 2:HVAC Fan 2:2:3	MF0-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-13 2F-01	1020.26	2	1	DU-13 2F-01 | :Heat Pump System 3:Air Distribution System 3:HVAC Fan 3:2:3	MF1-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-14 2F-02	925	2	1	DU-14 2F-02 | :Heat Pump System 3:Air Distribution System 3:HVAC Fan 3:2:3	MF1-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan

F4. 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-15 2F-03	917.51	2	1	DU-15 2F-03 | :Heat Pump System 3:Air Distribution System 3:HVAC Fan 3:2:3	MF1-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-16 2F-04	917.5	2	1	DU-16 2F-04 | :Heat Pump System 3:Air Distribution System 3:HVAC Fan 3:2:3	MF1-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-17 2F-05	924.5	2	1	DU-17 2F-05 | :Heat Pump System 3:Air Distribution System 3:HVAC Fan 3:2:3	MF1-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-18 2F-06	1027	2	1	DU-18 2F-06 | :Heat Pump System 3:Air Distribution System 3:HVAC Fan 3:2:3	MF1-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-19 2F-07	1022	2	1	DU-19 2F-07 | :Heat Pump System 3:Air Distribution System 3:HVAC Fan 3:2:3	MF1-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-20 2F-09	925	2	1	DU-20 2F-09 | :Heat Pump System 3:Air Distribution System 3:HVAC Fan 3:2:3	MF1-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-21 2F-10	925	2	1	DU-21 2F-10 | :Heat Pump System 3:Air Distribution System 3:HVAC Fan 3:2:3	MF1-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan

F4. 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-22 2F-12	1020	2	1	DU-22 2F-12 | :Heat Pump System 3:Air Distribution System 3:HVAC Fan 3:2:3	MF1-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-23 2F-08	685	1	1	DU-23 2F-08 | :Heat Pump System 4:Air Distribution System 4:HVAC Fan 4:2:3	MF1-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-24 2F-11	685	1	1	DU-24 2F-11 | :Heat Pump System 4:Air Distribution System 4:HVAC Fan 4:2:3	MF1-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-25 3F-01	1020.26	2	1	DU-25 3F-01 | :Heat Pump System 5:Air Distribution System 5:HVAC Fan 5:2:3	MF2-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-26 3F-02	925	2	1	DU-26 3F-02 | :Heat Pump System 5:Air Distribution System 5:HVAC Fan 5:2:3	MF2-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-27 3F-03	917.51	2	1	DU-27 3F-03 | :Heat Pump System 5:Air Distribution System 5:HVAC Fan 5:2:3	MF2-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-28 3F-04	917.5	2	1	DU-28 3F-04 | :Heat Pump System 5:Air Distribution System 5:HVAC Fan 5:2:3	MF2-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan

F4. 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-29 3F-05	924.5	2	1	DU-29 3F-05 | :Heat Pump System 5:Air Distribution System 5:HVAC Fan 5:2:3	MF2-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-30 3F-06	1027	2	1	DU-30 3F-06 | :Heat Pump System 5:Air Distribution System 5:HVAC Fan 5:2:3	MF2-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-31 3F-07	1022	2	1	DU-31 3F-07 | :Heat Pump System 5:Air Distribution System 5:HVAC Fan 5:2:3	MF2-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-32 3F-09	925	2	1	DU-32 3F-09 | :Heat Pump System 5:Air Distribution System 5:HVAC Fan 5:2:3	MF2-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-33 3F-10	925	2	1	DU-33 3F-10 | :Heat Pump System 5:Air Distribution System 5:HVAC Fan 5:2:3	MF2-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-34 3F-12	1020	2	1	DU-34 3F-12 | :Heat Pump System 5:Air Distribution System 5:HVAC Fan 5:2:3	MF2-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan
DU-35 3F-08	685	1	1	DU-35 3F-08 | :Heat Pump System 6:Air Distribution System 6:HVAC Fan 6:2:3	MF2-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan

F4. 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-36 3F-11	685	1	1	DU-36 3F-11 | :Heat Pump System 6:Air Distribution System 6:HVAC Fan 6:2:3	MF2-Rheem PROPH65 T2 RH350 D1	Default Minimum Balanced IAQ Fan

G1. ENVELOPE GENERAL INFORMATION (conditioned spaces only)

01	02	03	04
Opaque Surfaces & Orientation	Total Gross Surface Area (ft^2)	Total Fenestration Area (ft^2)	Window to Wall Ratio (%)
North-Facing[1]	8613	2656.5	30.84
East-Facing[2]	375	0	0
South-Facing[3]	0	0	0
West-Facing[4]	9936	3013.5	30.33
Total	**18924**	**5670**	**29.96**
Roof	10993.8	0	0

Notes

[1]North-Facing is oriented to within 45 degrees of true north, including 45 00'00" east of north (NE), but excluding 45 00'00" west of north (NW),

[2]East-Facing is oriented to within 45 degrees of true east, including 45 00'00" south of east (SE), but excluding 45 00'00" north of east (NE),

[3]South-Facing is oriented to within 45 degrees of true south, including 45 00'00" west of south (SW), but excluding 45 00'00" east of south (SE),

[4]West-Facing is oriented to within 45 degrees of true west, including 45 00'00" north of west (NW), but excluding 45 00'00" south of west (SW),

G2B. ROOFING PRODUCT SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06
Name	Roof Pitch	Roof Rise (x in 12)	Aged Solar Reflectance	Thermal Emittance	SRI
Roof	Low slope	0	0.1	0.85	N/A
Roof 2	Low slope	0	0.1	0.85	N/A
Roof 3	Low slope	0	0.1	0.85	N/A
Roof 4	Low slope	0	0.1	0.85	N/A
Roof 5	Low slope	0	0.1	0.85	N/A
Roof 6	Low slope	0	0.1	0.85	N/A
Roof 7	Low slope	0	0.1	0.85	N/A
Roof 8	Low slope	0	0.1	0.85	N/A
Roof 9	Low slope	0	0.1	0.85	N/A
Roof 10	Low slope	0	0.1	0.85	N/A
Roof 11	Low slope	0	0.1	0.85	N/A
Roof 12	Low slope	0	0.1	0.85	N/A
Roof 13	Low slope	0	0.1	0.85	N/A

G5. OPAQUE SURFACE ASSEMBLY SUMMARY

01	02	03	04	05	06		07	08	09	10
Surface Name	Construction Type	Area (ft^2)	Framing Type	Cavity R-Value	Continuous R-Value		Units	Value	Description of Assembly Layers	Status[1]
					Interior	Exterior				
R-19 Wall Coffee Road	Exterior Walls	19,434	Wood Framed Wall	18	0	0	U-factor	0.0738	Inside Finish: Gypsum Board Cavity / Frame: R-19 in 5-1/2 in. (R-18) / 2x6 Exterior Finish: 3 Coat Stucco	N
Ceiling 01	Interior Ceiling	26,151.5	Wood Framed Ceiling	30	0	0	U-factor	0.0329	Floor Surface: Carpeted Floor Deck: Wood Siding/sheathing/decking Cavity / Frame: R-30 / 2x10 Ceiling Below Finish: Gypsum Board	N
Adjacents	Interior Walls	43,560	Wood Framed Wall	13	0	0	U-factor	0.0919	Inside Finish: Gypsum Board Cavity / Frame: R-13 / 2x4 Other Side Finish: Gypsum Board	
Flooring	Interior Floors	26,151.5	Wood Framed Floor	18	0	0	U-factor	0.0492	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	N
R-38 Roof No Attic	Cathedral Ceilings	13,075.8	Wood Framed Ceiling	38	0	0	U-factor	0.03	Roofing: Light Roof (Asphalt Shingle) Roof Deck: Wood Siding/sheathing/decking Cavity / Frame: R-38 / 2x12 Inside Finish: Gypsum Board	N

[1] Status: N - New, A - Altered, E - Existing

G6B. OPAQUE DOOR SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04
Name	Area (ft^2)	Overall U-factor	Status[1]
D3	22	0.2	N
D3 2	22	0.2	N
D3 3	22	0.2	N
D3 4	22	0.2	N
D3 5	22	0.2	N
D3 6	22	0.2	N
D3 7	22	0.2	N
D3 8	22	0.2	N
D3 9	22	0.2	N
D3 10	22	0.2	N
D3 11	22	0.2	N
D3 12	22	0.2	N
D3 13	22	0.2	N
D3 14	22	0.2	N
D3 15	22	0.2	N
D3 16	22	0.2	N
D3 17	22	0.2	N
D3 18	22	0.2	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W1	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 2	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W3	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls	0	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 3	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	West Walls	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 4	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	West Walls 2	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	West Walls 2	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 5	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W1 6	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W3 2	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls	270	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 7	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 2	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 2	270	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 2	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 2	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 8	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 3	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 2	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 3	270	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
D7 3	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 3	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 3	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 2	0	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 9	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 2	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 4	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 2	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 10	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 3	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 11	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 3	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 5	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	East Walls 5	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
D7 6	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	East Walls 6	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 12	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	East Walls 6	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 13	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 4	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 14	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 4	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W3 3	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 4	270	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 15	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 5	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 7	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 5	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W2 4	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 5	270	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 16	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 6	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 8	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 6	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 5	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 6	270	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 17	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 4	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 9	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 4	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 6	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 4	0	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W1 18	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 5	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 10	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 5	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W3 4	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 5	0	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 19	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 6	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 11	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 6	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W3 5	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 6	0	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 20	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 7	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W1 21	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 7	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W3 6	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 7	0	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 22	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	West Walls 11	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 23	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	West Walls 12	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 12	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	West Walls 12	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 24	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 7	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 25	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 7	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W3 7	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 7	270	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 26	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 8	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 7	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 8	270	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 13	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 8	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 27	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 9	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 8	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 9	270	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 14	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 9	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W2 9	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 8	0	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 28	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 8	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 15	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 8	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 29	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 9	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 30	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 9	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 16	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	East Walls 14	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 17	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	East Walls 15	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W1 31	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	East Walls 15	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 32	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 10	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 33	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 10	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W3 8	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 10	270	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 34	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 11	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 18	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 11	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 10	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 11	270	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W1 35	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 12	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 19	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 12	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 11	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 12	270	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 36	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 10	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 20	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 10	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 12	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 10	0	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 37	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 11	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
D7 21	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 11	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W3 9	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 11	0	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 38	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 12	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 22	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 12	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W3 10	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 12	0	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 39	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 13	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 40	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 13	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W3 11	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 13	0	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 41	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	West Walls 21	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 42	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	West Walls 22	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 23	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	West Walls 22	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 43	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 13	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 44	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 13	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W3 12	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 13	270	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W1 45	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 14	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 13	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 14	270	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 24	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 14	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 46	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 15	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 14	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 15	270	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 25	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 15	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 15	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 14	0	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W1 47	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 14	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 26	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 14	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 48	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 15	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 49	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 15	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 27	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	East Walls 23	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 28	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	East Walls 24	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 50	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	East Walls 24	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W1 51	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 16	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 52	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 16	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W3 13	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 16	270	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 53	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 17	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 29	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 17	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 16	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 17	270	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 54	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 18	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
D7 30	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 18	270	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 17	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	South Walls 18	270	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 55	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 16	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 31	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 16	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W2 18	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 16	0	1	70	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 56	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 17	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 32	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 17	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
W3 14	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 17	0	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W1 57	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 18	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D7 33	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 18	0	1	45.5	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
W3 15	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 18	0	1	21	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D8	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 19	0	1	42	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D8 2	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 19	0	1	42	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D8 3	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 20	0	1	42	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

G7B. FENESTRATION SUMMARY (MULTIFAMILY AND COMMON AREAS)

01	02	03	04	05	06	07	08	09	10	11	12	13
Fenestration Name	Fenestration Type/ Product Type / Frame Type	Parent Surface	Azimuth	Multiplier	Area (ft^2)	Overall U-factor	U-factor Source	Overall SHGC	SHGC Source	Overall VT	Exterior Shading	Status[1]
D8 4	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 20	0	1	42	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D8 5	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 21	0	1	42	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N
D8 6	Vertical fenestration Architectural Window - Operable (Multifamily only) N/A	North Walls 21	0	1	42	0.3	NFRC	0.23	NFRC	N/A	Standard bug screens	N

[1] *Status: N - New, A - Altered, E - Existing*

H2. DWELLING UNIT HVAC HEATING AND COOLING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12	13
Dwelling Unit Type Name	Equipment Name	Equipment Type	Quantity	Air Distribution System Name	Fan System name	Heating				Cooling		
						Heat Output at 47	Heat Output at 17	Efficiency Unit	Efficiency	Total Cooling Output	Efficiency Unit	Efficiency
DU-1 FF-01	Heat Pump System 1	VCHP	1	Air Distribution System 1	HVAC Fan 1	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-2 FF-02	Heat Pump System 1	VCHP	1	Air Distribution System 1	HVAC Fan 1	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-3 FF-03	Heat Pump System 1	VCHP	1	Air Distribution System 1	HVAC Fan 1	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-4 FF-04	Heat Pump System 1	VCHP	1	Air Distribution System 1	HVAC Fan 1	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-5 FF-05	Heat Pump System 1	VCHP	1	Air Distribution System 1	HVAC Fan 1	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-6 FF-06	Heat Pump System 1	VCHP	1	Air Distribution System 1	HVAC Fan 1	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-7 FF-07	Heat Pump System 1	VCHP	1	Air Distribution System 1	HVAC Fan 1	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-8 FF-09	Heat Pump System 1	VCHP	1	Air Distribution System 1	HVAC Fan 1	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-9 FF-10	Heat Pump System 1	VCHP	1	Air Distribution System 1	HVAC Fan 1	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15

H2. DWELLING UNIT HVAC HEATING AND COOLING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12	13
Dwelling Unit Type Name	Equipment Name	Equipment Type	Quantity	Air Distribution System Name	Fan System name	Heating				Cooling		
						Heat Output at 47	Heat Output at 17	Efficiency Unit	Efficiency	Total Cooling Output	Efficiency Unit	Efficiency
DU-10 FF-12	Heat Pump System 1	VCHP	1	Air Distribution System 1	HVAC Fan 1	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-11 FF-08	Heat Pump System 2	VCHP	1	Air Distribution System 2	HVAC Fan 2	18,000	15,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-12 FF-11	Heat Pump System 2	VCHP	1	Air Distribution System 2	HVAC Fan 2	18,000	15,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-13 2F-01	Heat Pump System 3	VCHP	1	Air Distribution System 3	HVAC Fan 3	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-14 2F-02	Heat Pump System 3	VCHP	1	Air Distribution System 3	HVAC Fan 3	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-15 2F-03	Heat Pump System 3	VCHP	1	Air Distribution System 3	HVAC Fan 3	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-16 2F-04	Heat Pump System 3	VCHP	1	Air Distribution System 3	HVAC Fan 3	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-17 2F-05	Heat Pump System 3	VCHP	1	Air Distribution System 3	HVAC Fan 3	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-18 2F-06	Heat Pump System 3	VCHP	1	Air Distribution System 3	HVAC Fan 3	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15

H2. DWELLING UNIT HVAC HEATING AND COOLING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12	13
Dwelling Unit Type Name	Equipment Name	Equipment Type	Quantity	Air Distribution System Name	Fan System name	Heating				Cooling		
						Heat Output at 47	Heat Output at 17	Efficiency Unit	Efficiency	Total Cooling Output	Efficiency Unit	Efficiency
DU-19 2F-07	Heat Pump System 3	VCHP	1	Air Distribution System 3	HVAC Fan 3	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-20 2F-09	Heat Pump System 3	VCHP	1	Air Distribution System 3	HVAC Fan 3	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-21 2F-10	Heat Pump System 3	VCHP	1	Air Distribution System 3	HVAC Fan 3	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-22 2F-12	Heat Pump System 3	VCHP	1	Air Distribution System 3	HVAC Fan 3	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-23 2F-08	Heat Pump System 4	VCHP	1	Air Distribution System 4	HVAC Fan 4	18,000	15,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-24 2F-11	Heat Pump System 4	VCHP	1	Air Distribution System 4	HVAC Fan 4	18,000	15,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-25 3F-01	Heat Pump System 5	VCHP	1	Air Distribution System 5	HVAC Fan 5	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-26 3F-02	Heat Pump System 5	VCHP	1	Air Distribution System 5	HVAC Fan 5	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-27 3F-03	Heat Pump System 5	VCHP	1	Air Distribution System 5	HVAC Fan 5	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15

H2. DWELLING UNIT HVAC HEATING AND COOLING SYSTEMS

01	02	03	04	05	06	07	08	09	10	11	12	13
Dwelling Unit Type Name	Equipment Name	Equipment Type	Quantity	Air Distribution System Name	Fan System name	Heating				Cooling		
						Heat Output at 47	Heat Output at 17	Efficiency Unit	Efficiency	Total Cooling Output	Efficiency Unit	Efficiency
DU-28 3F-04	Heat Pump System 5	VCHP	1	Air Distribution System 5	HVAC Fan 5	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-29 3F-05	Heat Pump System 5	VCHP	1	Air Distribution System 5	HVAC Fan 5	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-30 3F-06	Heat Pump System 5	VCHP	1	Air Distribution System 5	HVAC Fan 5	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-31 3F-07	Heat Pump System 5	VCHP	1	Air Distribution System 5	HVAC Fan 5	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-32 3F-09	Heat Pump System 5	VCHP	1	Air Distribution System 5	HVAC Fan 5	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-33 3F-10	Heat Pump System 5	VCHP	1	Air Distribution System 5	HVAC Fan 5	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-34 3F-12	Heat Pump System 5	VCHP	1	Air Distribution System 5	HVAC Fan 5	24,000	20,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-35 3F-08	Heat Pump System 6	VCHP	1	Air Distribution System 6	HVAC Fan 6	18,000	15,000	HSPF	8.8	N/A	EER SEER	12.2 15
DU-36 3F-11	Heat Pump System 6	VCHP	1	Air Distribution System 6	HVAC Fan 6	18,000	15,000	HSPF	8.8	N/A	EER SEER	12.2 15

H10. MULTIFAMILY DWELLING UNIT TYPE CENTRAL / INDIVIDUAL VENTILATION

01	02	03	04	05	06	07	08	09	10	11	12	13
Dwelling Unit Type Name	IAQ Option	Central Fan (If applicable)					Individual Fan (if applicable)					
		IAQ Fan Type Type	Supply Airflow CFM	Supply Fan Efficacy W/CFM	Exhaust CFM	Exhaust Fan Efficacy W/CFM	IAQ Fan Type	Count	Airflow CFM	Fan Efficacy W/CFM	Recovery Efficiency SRE	Recovery Efficiency ASRE
DU-1 FF-01	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.11	N/A	N/A	N/A
DU-2 FF-02	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.25	N/A	N/A	N/A
DU-3 FF-03	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.03	N/A	N/A	N/A
DU-4 FF-04	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.02	N/A	N/A	N/A
DU-5 FF-05	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.23	N/A	N/A	N/A
DU-6 FF-06	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.31	N/A	N/A	N/A
DU-7 FF-07	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.16	N/A	N/A	N/A
DU-8 FF-09	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.25	N/A	N/A	N/A
DU-9 FF-10	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.25	N/A	N/A	N/A
DU-10 FF-12	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.1	N/A	N/A	N/A
DU-11 FF-08	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35.55	N/A	N/A	N/A
DU-12 FF-11	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35.55	N/A	N/A	N/A
DU-13 2F-01	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.11	N/A	N/A	N/A

H10. MULTIFAMILY DWELLING UNIT TYPE CENTRAL / INDIVIDUAL VENTILATION

01	02	03	04	05	06	07	08	09	10	11	12	13
Dwelling Unit Type Name	IAQ Option	Central Fan (If applicable)					Individual Fan (if applicable)					
		IAQ Fan Type Type	Supply Airflow CFM	Supply Fan Efficacy W/CFM	Exhaust CFM	Exhaust Fan Efficacy W/CFM	IAQ Fan Type	Count	Airflow CFM	Fan Efficacy W/CFM	Recovery Efficiency SRE	Recovery Efficiency ASRE
DU-14 2F-02	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.25	N/A	N/A	N/A
DU-15 2F-03	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.03	N/A	N/A	N/A
DU-16 2F-04	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.02	N/A	N/A	N/A
DU-17 2F-05	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.23	N/A	N/A	N/A
DU-18 2F-06	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.31	N/A	N/A	N/A
DU-19 2F-07	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.16	N/A	N/A	N/A
DU-20 2F-09	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.25	N/A	N/A	N/A
DU-21 2F-10	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.25	N/A	N/A	N/A
DU-22 2F-12	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.1	N/A	N/A	N/A
DU-23 2F-08	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35.55	N/A	N/A	N/A
DU-24 2F-11	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35.55	N/A	N/A	N/A
DU-25 3F-01	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.11	N/A	N/A	N/A
DU-26 3F-02	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.25	N/A	N/A	N/A

H10. MULTIFAMILY DWELLING UNIT TYPE CENTRAL / INDIVIDUAL VENTILATION

01	02	03	04	05	06	07	08	09	10	11	12	13
Dwelling Unit Type Name	IAQ Option	Central Fan (If applicable)					Individual Fan (if applicable)					
		IAQ Fan Type Type	Supply Airflow CFM	Supply Fan Efficacy W/CFM	Exhaust CFM	Exhaust Fan Efficacy W/CFM	IAQ Fan Type	Count	Airflow CFM	Fan Efficacy W/CFM	Recovery Efficiency SRE	Recovery Efficiency ASRE
DU-27 3F-03	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.03	N/A	N/A	N/A
DU-28 3F-04	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.02	N/A	N/A	N/A
DU-29 3F-05	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.23	N/A	N/A	N/A
DU-30 3F-06	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.31	N/A	N/A	N/A
DU-31 3F-07	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.16	N/A	N/A	N/A
DU-32 3F-09	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.25	N/A	N/A	N/A
DU-33 3F-10	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.25	N/A	N/A	N/A
DU-34 3F-12	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53.1	N/A	N/A	N/A
DU-35 3F-08	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35.55	N/A	N/A	N/A
DU-36 3F-11	Default Minimum Balanced IAQ Fan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35.55	N/A	N/A	N/A

I1. WATER HEATER EQUIPMENT SUMMARY

01	02	03	04	05	06	07	08	09	10	11	12	13	14
Name	Heater Element Type	Tank Type	Qty	Tank Vol (gal)	Rated Input (kW)	Rated Input Unit	Efficiency	Efficiency Unit	Tank Insulation R-value Int/Ext	Standby Loss Fraction	1st Hr. Rating or Flow Rate (gal)	Heat Pump Type	Tank Location or Ambient Condition
Rheem PROPH65 T2 RH350 D10	Heat Pump	N/A	1	65	12	kW	kW	EF	0	0	N/A	Residential (NEEA RATED) pRODUCT	Outside
Rheem PROPH65 T2 RH350 D11	Heat Pump	N/A	1	65	12	kW	kW	EF	0	0	N/A	Residential (NEEA RATED) pRODUCT	Outside
Rheem PROPH65 T2 RH350 D12	Heat Pump	N/A	1	65	12	kW	kW	EF	0	0	N/A	Residential (NEEA RATED) pRODUCT	Outside

I2. MULTI-FAMILY WATER HEATING SYSTEM DETAIL

01	02	03	04	05	06	07	08
System Name	Configuration	Type	Qty in System	Dwelling Unit Distribution Type	Water Heater Name	Solar Heating System	Is Compact Distribution
MF0-Rheem PROPH65 T2 RH350 D1	Domestic Hot Water (DHW)	Unitary	1	Standard Distribution System	Rheem PROPH65 T2 RH350 D10	N/A	No
MF1-Rheem PROPH65 T2 RH350 D1	Domestic Hot Water (DHW)	Unitary	1	Standard Distribution System	Rheem PROPH65 T2 RH350 D11	N/A	No
MF2-Rheem PROPH65 T2 RH350 D1	Domestic Hot Water (DHW)	Unitary	1	Standard Distribution System	Rheem PROPH65 T2 RH350 D12	N/A	No

Documentation Author's Declaration Statement

1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Mohamad Nohayli	Documentation Author Signature:
Company: InnoDez, Inc.	Signature Date:
Address:	CEA/HERS Certification Identification (if applicable):
City/State/Zip: ,	Phone:

Responsible Person's Declaration statement

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. 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.
5. I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to accomplish this requirement.
6. I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to accomplish these requirements.

Responsible Designer Name: Syed P. Alam	Responsible Designer Signature:	
Company: Innodez Inc.		
Address: 726 Foxbrough	Date Signed:	
City/State/Zip: Pleasanton, CA 94566	License #: 27087	
Phone:	Title:	Scope:

Responsible Designer Name: Syed P. Alam	Responsible Designer Signature:	
Company: Innodez Inc.		
Address: 726 Foxbrough	Date Signed:	
City/State/Zip: Pleasanton, CA 94566	License #: 27087	
Phone:	Title:	Scope:

Responsible Designer Name: Syed P. Alam	Responsible Designer Signature:	
Company: Innodez Inc.		
Address: 726 Foxbrough	Date Signed:	
City/State/Zip: Pleasanton, CA 94566	License #: 27087	
Phone:	Title:	Scope:

Solar And Battery

CERTIFICATE OF COMPLIANCE			NRCC-SAB-E
This document is used to demonstrate compliance with prescriptive PV and battery requirements in 140.10/ 170.2 for nonresidential, multifamily and mixed-use buildings and prescriptive solar thermal requirements in 170.2(d)3C for multifamily and hotel/ motel occupancies. When PV/battery/solar thermal requirements don't apply or are traded using the performance approach, this document demonstrates compliance with mandatory solar readiness requirements in 110.10/ 160.8 for newly constructed buildings which are either multifamily ten stories or fewer, hotel/motel ten stories or fewer or all other nonresidential buildings three stories or fewer. It is also used to demonstrate compliance with solar readiness in 110.10/ 160.8 for additions to nonresidential, multifamily or hotel/motel building types which add more than 2,000 ft^2 of roof area. Alterations, or additions of less than 2,000 ft^2 of roof area, are not required to comply with solar readiness, solar PV and battery requirements and do not need to complete this document.			
Project Name:	90 Apartment Units - Building 01	**Report Page:**	**(Page 1 of 5)**
Project Address:	3955 Coffee Road	**Date Prepared:**	5/22/2023

A. GENERAL INFORMATION

01	Project Location (city)	Modesto	04	Building Occupancies	High-Rise ResidentialSupport Areas
02	Climate Zone	12	05	Construction Type	New construction
03	Conditioned Floor Area (ft^2)	32981	06	Number of Stories	Bldg <= 3 stories

B. PROJECT SCOPE

The compliance path the project is using to comply per 110.10(b)1B/ 140.10/ 170.2(g and h) is indicated below.

Compliance with Solar Photovoltaic (PV) and Battery Requirements in 140.10/ 170.2(g and h)		
		01
☒	Provided PV system and battery storage sized per 140.10/ 170.2 (g and h)	The project has included an installed PV system and battery storage system per requirements in 140.10/ 170.2(g and h) as documented in Table J.
☐	Exception to PV and Battery: Not enough Solar Access Roof Area	The total of all available Solar Access Roof Area(s) of the project site is less than three percent of the conditioned floor area as documented in Table J.
☐	Exception to PV and Battery: Required PV < 4kW	The required PV system size is less than 4 kW dc as documented in Table J..
☐	Exception to PV and Battery: No contiguous Solar Access Roof Area	The Solar Access Roof Area(s) of the project site contains less than 80 contiguous square feet as documented in Table J.
☐	Exception to PV and Battery: Can't meet snow load	The project has a roof design where the enforcement authority has verified it is not possible for the PV system, including panels, modules, components, supports, and attachments to the roof structure, to meet ASCE 7-16 Chapter 7, Snow Loads.
☐	Exception to PV and Battery: Multi-tenant without VNEM or Community Solar	The project is a multi-tenant building in an area where a load serving entity does not provide either a Virtual Net Metering (VNEM) or community solar program.
☐	The prescriptive PV/battery requirement has been traded off using the performance compliance approach as documented on the PRF Certificate of Compliance form.	The project is a multi-tenant building in an area where a load serving entity does not provide either a Virtual Net Metering (VNEM) or community solar program.

CERTIFICATE OF COMPLIANCE			**NRCC-SAB-E**
Project Name:	90 Apartment Units - Building 01	**Report Page:**	**(Page 2 of 5)**
Project Address:	3955 Coffee Road	**Date Prepared:**	5/22/2023

Compliance with Solar Thermal Water Heating Requirements in 170.2(d)3C (Multifamiily and hotel/ motel occupancies only)	
01	
☐	The project includes a hotel/motel or multifamily occupancy with a gas or propane central water-heating system (serves 2+ dwelling units) and includes a permanently installed domestic solar water-heating system to comply with 170.2(d)3C and Reference Residential Appendix RA4, as documented in Table H. Compliance meets Exception 2 to solar ready requirements in 110.10(b).

C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through I. Note: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance or see the applicable Table referenced below.

Allocated Solar Zone				**Installed PV System**				**Installed SWH System**				**Smart Tstat and Alternative EE Measure**		**Compliance Results**
01		02		03		04		05		06		07	08	
Required Minimum Area (ft^2)	<=	Designated Area (ft^2)	OR	Required Minimum DC Power Rating (Watts)	<=	Designed DC Power Rating (Watts)	OR	Required Minimum Solar Savings Fraction	<=	Designed/Rated Solar Savings Fraction	OR	JA5 Compliant Thermostat Specified?	Alternative Energy Efficiency Measure	COMPLIES
(See Table F)				(See Tables G or J)				(See Table H)				(See Table I)		
	<=		OR	0	<=	69,000	OR		<=		OR			
			Location in construction documents showing the location for inverters and metering equipment and a pathway for the routing of conduit/ plumbing to the electrical service/ water heating system per §110.10(c).											
Battery storage system design meets the minimum requirements in Joint Appendix JA12 and the minimum energy (kWh)/ power (kW) capacity per Table J.														COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table is includes remarks made by the permit applicant to the Authority Having Jurisdiction.

CERTIFICATE OF COMPLIANCE			NRCC-SAB-E
Project Name:	90 Apartment Units - Building 01	**Report Page:**	**(Page 3 of 5)**
Project Address:	3955 Coffee Road	**Date Prepared:**	5/22/2023

F. ALLOCATED SOLAR ZONE

This section does not apply to this project.

G. PERMANENTLY INSTALLED SOLAR PV FOR SOLAR READY EXCEPTION

This section does not apply to this project.

H. PERMANENTLY INSTALLED SOLAR HOT WATER SYSTEMS

This section does not apply to this project.

I. SMART THERMOSTATS AND ALTERNATIVE EFFICIENCY MEASURE FOR SOLAR READY EXCEPTION

This section does not apply to this project.

CERTIFICATE OF COMPLIANCE			**NRCC-SAB-E**
Project Name:	90 Apartment Units - Building 01	**Report Page:**	**(Page 4 of 5)**
Project Address:	3955 Coffee Road	**Date Prepared:**	5/22/2023

J. PHOTOVOLTAIC (PV) AND BATTERY SYSTEMS

This table documents compliance with prescriptive photovoltaic and battery system requirements in 140.10/ 170.2(g and h). Unless the project meets one of the listed exceptions, or trades-off PV in an energy model using performance path, 140.10/ 170.2(g and h) requires installed photovoltaic and battery systems for newly constructed buildings. The installed PV systems must meet the minimum requirements in Joint Appendix 11.

Photovoltaic (PV) System

01	02	03	04	05	06	07	08
Occupancy	Conditioned Floor Area (ft^2)	Area of New Roof[1] (ft^2)	Roof Area < 70% Solar Access[2] (ft^2)	Plansheet or Document showing Solar Access Calculations	Occupied Roof Area[3] (ft^2)	Solar Access Roof Area (SARA) (ft^2)	Min Size of PV System Required (kWdc)
						Total Min Size PV System Required for all Spaces (kWdc):	0
						Total Size PV System in Design (kWdc):	69

[1]FOOTNOTES: Includes the area of the building's roof space capable of structurally supporting a PV system and the area of all roof space on covered parking areas, carports, and all other newly constructed structures on the site that are compatible with supporting a PV system per Title 24, Part 2 Section 1511.2.

[2]Solar access must be determined using CEC approved solar access calculation tools found at https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/solar-assessment-tools.

[3]As specified by CBC Section 503.1.4.

K. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Form/Title
NRCI-SAB-01-E - Must be submitted for all buildings that must comply with solar readiness or PV/Battery requirements.

L. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

There are no forms required for this project.

CERTIFICATE OF COMPLIANCE			**NRCC-SAB-E**
Project Name:	90 Apartment Units - Building 01	**Report Page:**	**(Page 5 of 5)**
Project Address:	3955 Coffee Road	**Date Prepared:**	5/22/2023

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Mohamad Nohayli	Documentation Author Signature:
Company: InnoDez, Inc.	Signature Date:
Address:	CEA/ HERS Certification Identification (if applicable):
City/State/Zip:	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. 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.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Syed P. Alam	Responsible Designer Signature:
Company: Innodez Inc.	Date Signed: 2023-05-22
Address: 726 Foxbrough	License: 27087
City/State/Zip: Pleasanton CA 94566	Phone:

HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name	Date
90 Apartment Units - Building 01	5/22/2023
System Name	**Floor Area**
HP-1 to 10	9,624

ENGINEERING CHECKS

Number of Systems	10
Heating System	
Output per System	24,000
Total Output (Btuh)	240,000
Output (Btuh/sqft)	24.9
Cooling System	
Output per System	24,000
Total Output (Btuh)	240,000
Total Output (Tons)	20.0
Total Output (Btuh/sqft)	24.9
Total Output (sqft/Ton)	481.2
Air System	
CFM per System	800
Airflow (cfm)	8,000
Airflow (cfm/sqft)	0.83
Airflow (cfm/Ton)	400.0
Outside Air (%)	0.0%
Outside Air (cfm/sqft)	0.00
Note: values above given at ARI conditions	

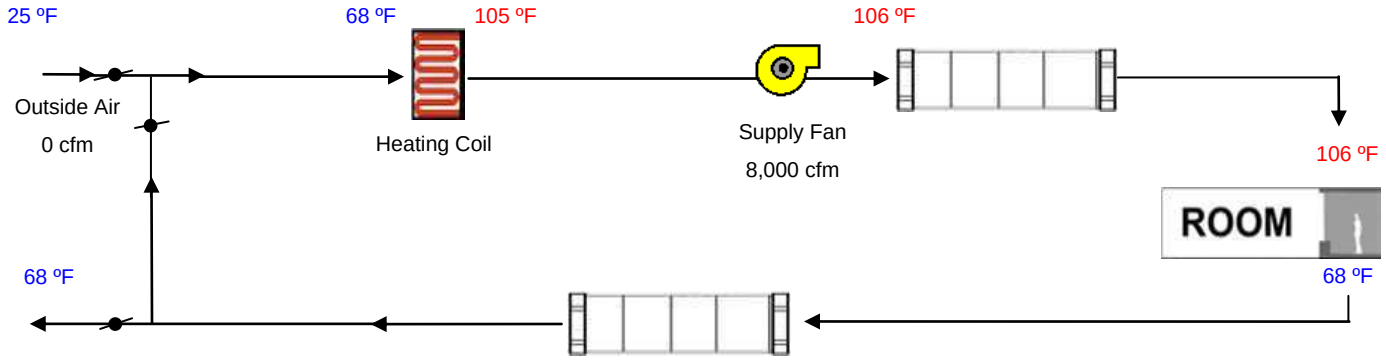
SYSTEM LOAD

	COIL COOLING PEAK			COIL HTG. PEAK	
	CFM	**Sensible**	**Latent**	**CFM**	**Sensible**
Total Room Loads	5,445	109,849	7,122	1,473	60,206
Return Vented Lighting		0			
Return Air Ducts		1,628			765
Return Fan		0			0
Ventilation	0	0	0	0	0
Supply Fan		9,210			-9,210
Supply Air Ducts		1,628			765
TOTAL SYSTEM LOAD		122,316	7,122		52,525

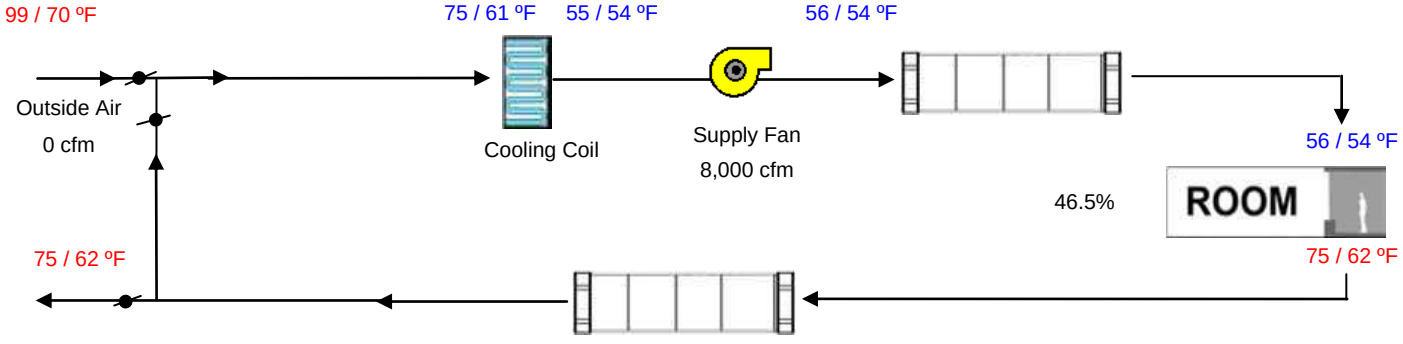
HVAC EQUIPMENT SELECTION

Standard Heat Pump 2 Tons	212,232	3,035		145,813
Total Adjusted System Output (Adjusted for Peak Design conditions)	212,232	3,035		145,813
TIME OF SYSTEM PEAK		Aug 3 PM		Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)



HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name	Date
90 Apartment Units - Building 01	5/22/2023
System Name	**Floor Area**
HP-11 & 12	1,370

ENGINEERING CHECKS

Number of Systems	2
Heating System	
Output per System	18,000
Total Output (Btuh)	36,000
Output (Btuh/sqft)	26.3
Cooling System	
Output per System	18,000
Total Output (Btuh)	36,000
Total Output (Tons)	3.0
Total Output (Btuh/sqft)	26.3
Total Output (sqft/Ton)	456.7
Air System	
CFM per System	600
Airflow (cfm)	1,200
Airflow (cfm/sqft)	0.88
Airflow (cfm/Ton)	400.0
Outside Air (%)	0.0%
Outside Air (cfm/sqft)	0.00
Note: values above given at ARI conditions	

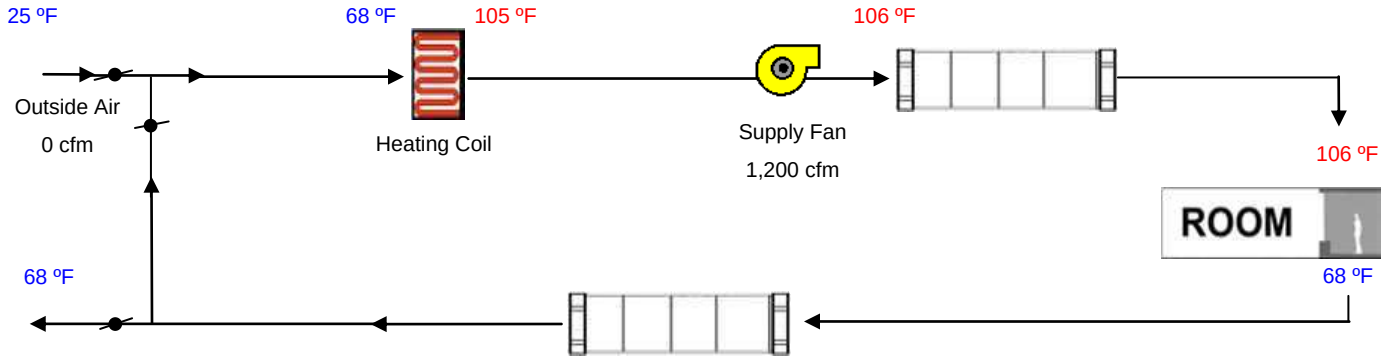
SYSTEM LOAD

	COIL COOLING PEAK			COIL HTG. PEAK	
	CFM	**Sensible**	**Latent**	**CFM**	**Sensible**
Total Room Loads	489	9,714	1,014	191	7,894
Return Vented Lighting		0			
Return Air Ducts		144			100
Return Fan		0			0
Ventilation	0	0	0	0	0
Supply Fan		1,842			-1,842
Supply Air Ducts		144			100
TOTAL SYSTEM LOAD		11,844	1,014		6,253

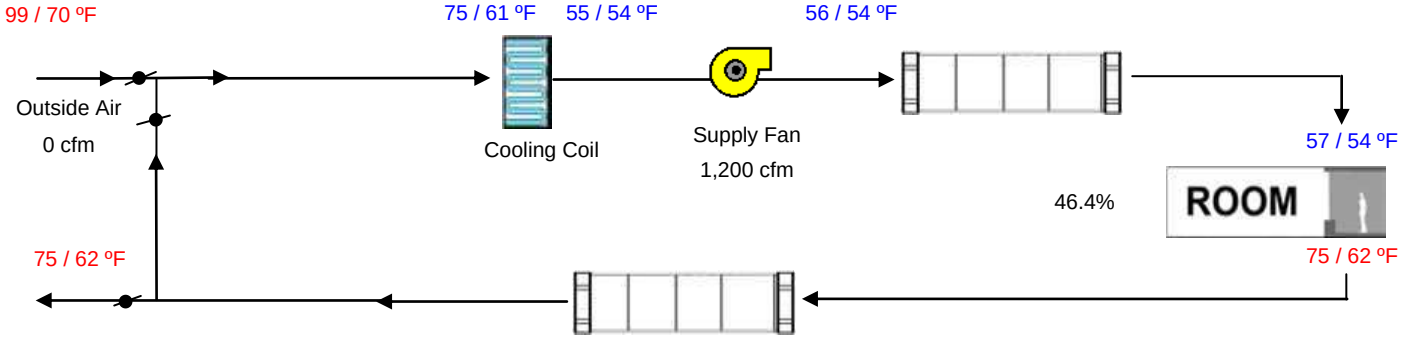
HVAC EQUIPMENT SELECTION

Standard Heat Pump 1.5 Tons	31,798	473		21,872
Total Adjusted System Output (Adjusted for Peak Design conditions)	31,798	473		21,872
TIME OF SYSTEM PEAK		Aug 3 PM		Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)



HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name	Date
90 Apartment Units - Building 01	5/22/2023
System Name	**Floor Area**
HP-13 to 22	9,624

ENGINEERING CHECKS

Number of Systems	10
Heating System	
Output per System	24,000
Total Output (Btuh)	240,000
Output (Btuh/sqft)	24.9
Cooling System	
Output per System	24,000
Total Output (Btuh)	240,000
Total Output (Tons)	20.0
Total Output (Btuh/sqft)	24.9
Total Output (sqft/Ton)	481.2
Air System	
CFM per System	800
Airflow (cfm)	8,000
Airflow (cfm/sqft)	0.83
Airflow (cfm/Ton)	400.0
Outside Air (%)	0.0%
Outside Air (cfm/sqft)	0.00
Note: values above given at ARI conditions	

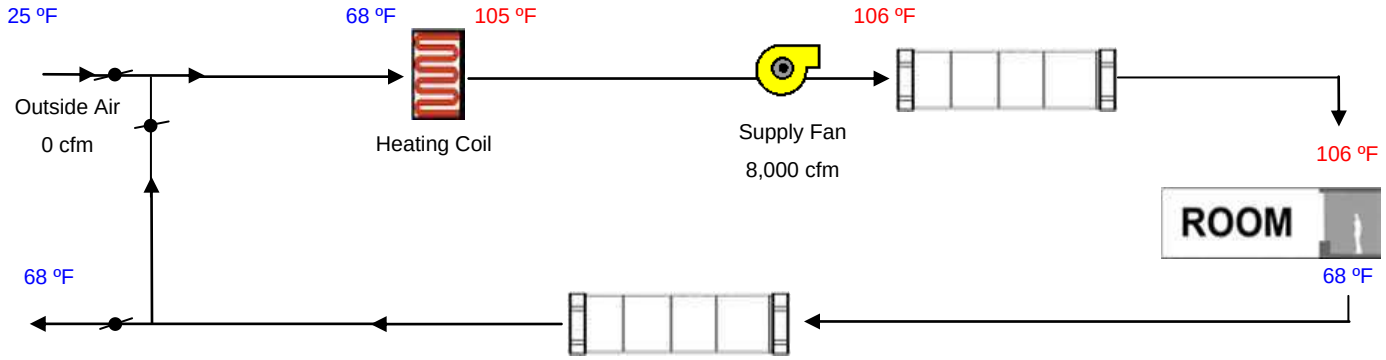
SYSTEM LOAD

	COIL COOLING PEAK			COIL HTG. PEAK	
	CFM	**Sensible**	**Latent**	**CFM**	**Sensible**
Total Room Loads	5,445	109,849	7,122	1,473	60,206
Return Vented Lighting		0			
Return Air Ducts		1,628			765
Return Fan		0			0
Ventilation	0	0	0	0	0
Supply Fan		9,210			-9,210
Supply Air Ducts		1,628			765
TOTAL SYSTEM LOAD		122,316	7,122		52,525

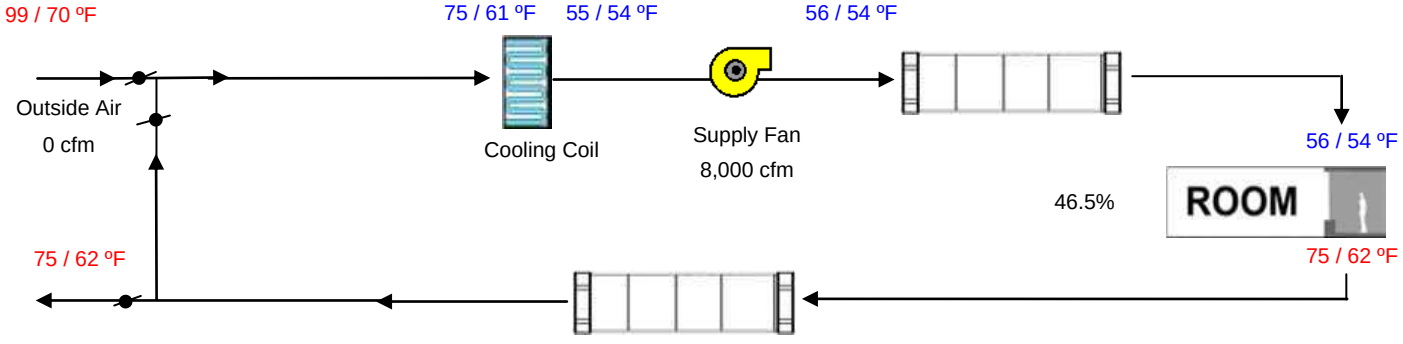
HVAC EQUIPMENT SELECTION

Standard Heat Pump 2 Tons	212,232	3,035		145,813
Total Adjusted System Output (Adjusted for Peak Design conditions)	212,232	3,035		145,813
TIME OF SYSTEM PEAK		Aug 3 PM		Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)



HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name	Date
90 Apartment Units - Building 01	5/22/2023
System Name	**Floor Area**
HP-23 & 24	1,370

ENGINEERING CHECKS

Number of Systems	2
Heating System	
Output per System	18,000
Total Output (Btuh)	36,000
Output (Btuh/sqft)	26.3
Cooling System	
Output per System	18,000
Total Output (Btuh)	36,000
Total Output (Tons)	3.0
Total Output (Btuh/sqft)	26.3
Total Output (sqft/Ton)	456.7
Air System	
CFM per System	600
Airflow (cfm)	1,200
Airflow (cfm/sqft)	0.88
Airflow (cfm/Ton)	400.0
Outside Air (%)	0.0%
Outside Air (cfm/sqft)	0.00
Note: values above given at ARI conditions	

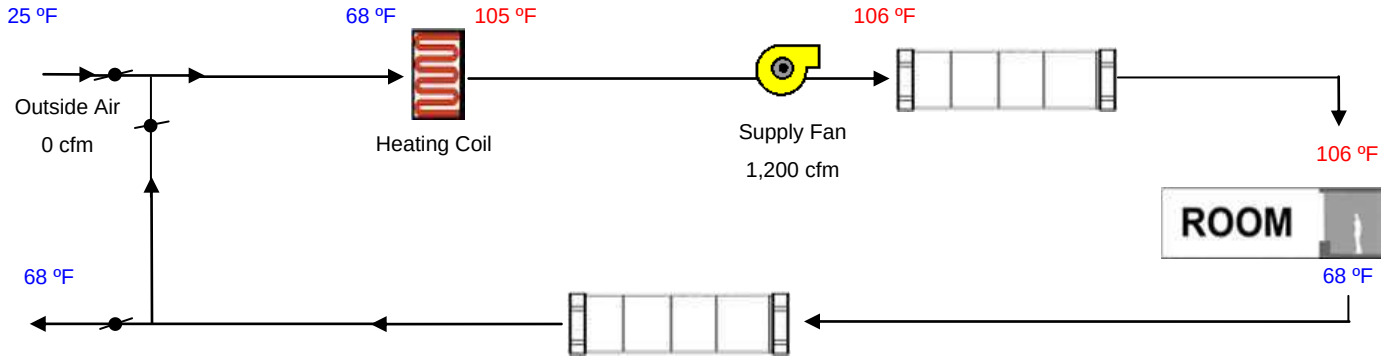
SYSTEM LOAD

	COIL COOLING PEAK			COIL HTG. PEAK	
	CFM	**Sensible**	**Latent**	**CFM**	**Sensible**
Total Room Loads	489	9,714	1,014	191	7,894
Return Vented Lighting		0			
Return Air Ducts		144			100
Return Fan		0			0
Ventilation	0	0	0	0	0
Supply Fan		1,842			-1,842
Supply Air Ducts		144			100
TOTAL SYSTEM LOAD		11,844	1,014		6,253

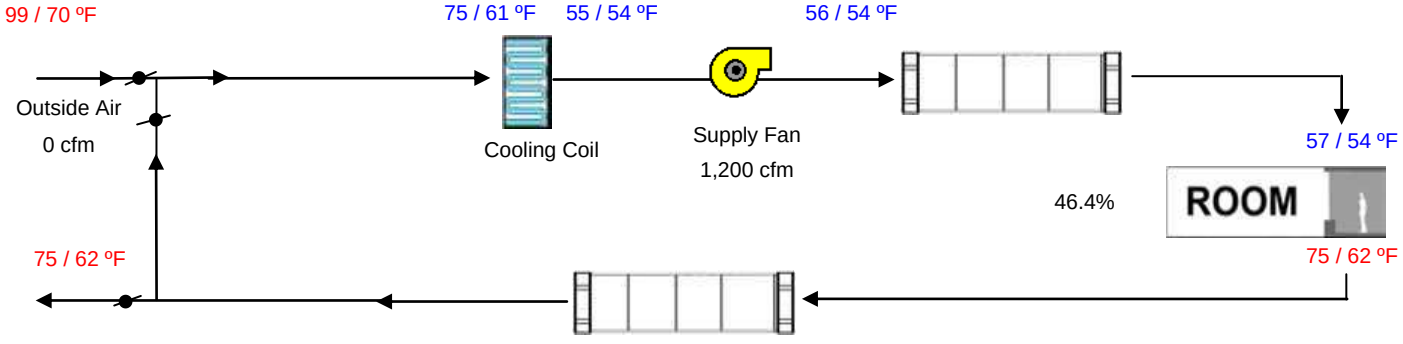
HVAC EQUIPMENT SELECTION

Standard Heat Pump 1.5 Tons	31,798	473		21,872
Total Adjusted System Output (Adjusted for Peak Design conditions)	31,798	473		21,872
TIME OF SYSTEM PEAK		Aug 3 PM		Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)



HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name	Date
90 Apartment Units - Building 01	5/22/2023
System Name	**Floor Area**
HP-25 to 34	9,624

ENGINEERING CHECKS

Number of Systems	10
Heating System	
Output per System	24,000
Total Output (Btuh)	240,000
Output (Btuh/sqft)	24.9
Cooling System	
Output per System	24,000
Total Output (Btuh)	240,000
Total Output (Tons)	20.0
Total Output (Btuh/sqft)	24.9
Total Output (sqft/Ton)	481.2
Air System	
CFM per System	800
Airflow (cfm)	8,000
Airflow (cfm/sqft)	0.83
Airflow (cfm/Ton)	400.0
Outside Air (%)	0.0%
Outside Air (cfm/sqft)	0.00
Note: values above given at ARI conditions	

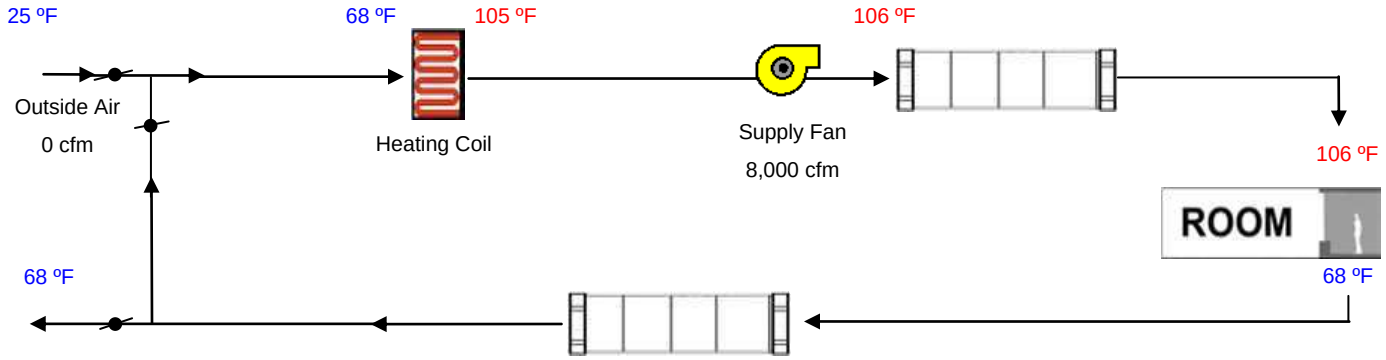
SYSTEM LOAD

	COIL COOLING PEAK			COIL HTG. PEAK	
	CFM	**Sensible**	**Latent**	**CFM**	**Sensible**
Total Room Loads	6,357	128,016	7,122	1,772	72,412
Return Vented Lighting		0			
Return Air Ducts		1,898			920
Return Fan		0			0
Ventilation	0	0	0	0	0
Supply Fan		9,210			-9,210
Supply Air Ducts		1,898			920
TOTAL SYSTEM LOAD		141,021	7,122		65,041

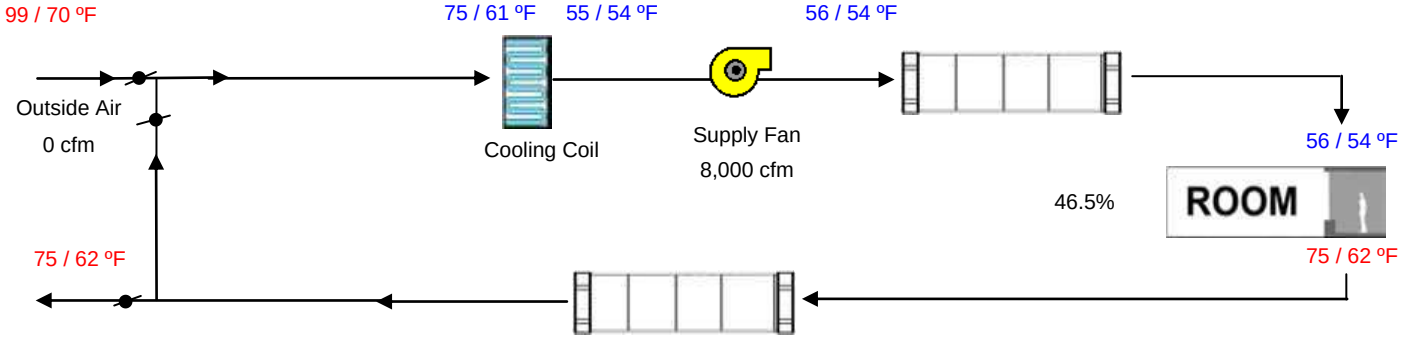
HVAC EQUIPMENT SELECTION

Standard Heat Pump 2 Tons	212,393	2,904		145,813
Total Adjusted System Output (Adjusted for Peak Design conditions)	212,393	2,904		145,813
TIME OF SYSTEM PEAK		Aug 3 PM		Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)



HVAC SYSTEM HEATING AND COOLING LOADS SUMMARY

Project Name	Date
90 Apartment Units - Building 01	5/22/2023
System Name	**Floor Area**
HP-35 & 36	1,370

ENGINEERING CHECKS

Number of Systems	2
Heating System	
Output per System	18,000
Total Output (Btuh)	36,000
Output (Btuh/sqft)	26.3
Cooling System	
Output per System	18,000
Total Output (Btuh)	36,000
Total Output (Tons)	3.0
Total Output (Btuh/sqft)	26.3
Total Output (sqft/Ton)	456.7
Air System	
CFM per System	600
Airflow (cfm)	1,200
Airflow (cfm/sqft)	0.88
Airflow (cfm/Ton)	400.0
Outside Air (%)	0.0%
Outside Air (cfm/sqft)	0.00
Note: values above given at ARI conditions	

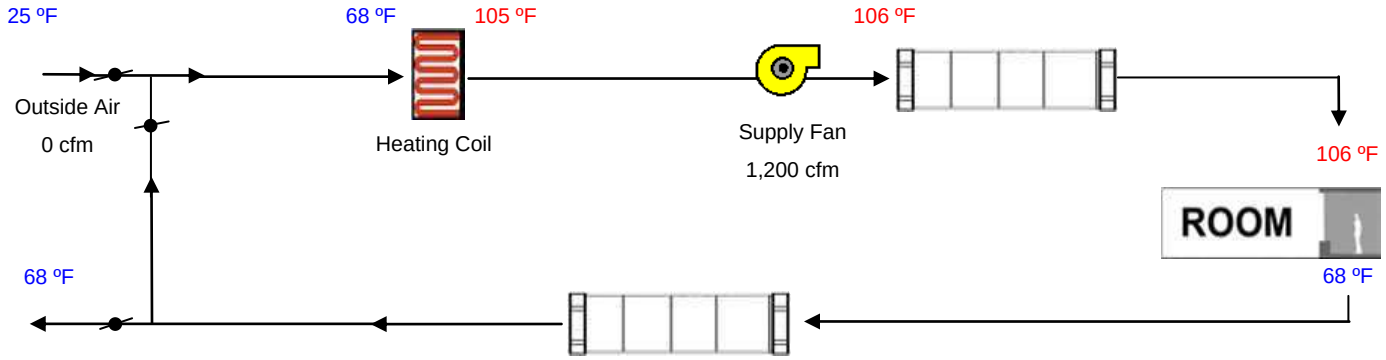
SYSTEM LOAD

	COIL COOLING PEAK			COIL HTG. PEAK	
	CFM	**Sensible**	**Latent**	**CFM**	**Sensible**
Total Room Loads	620	12,300	1,014	233	9,632
Return Vented Lighting		0			
Return Air Ducts		182			122
Return Fan		0			0
Ventilation	0	0	0	0	0
Supply Fan		1,842			-1,842
Supply Air Ducts		182			122
TOTAL SYSTEM LOAD		14,507	1,014		8,034

HVAC EQUIPMENT SELECTION

Standard Heat Pump 1.5 Tons	31,821	455		21,872
Total Adjusted System Output (Adjusted for Peak Design conditions)	31,821	455		21,872
TIME OF SYSTEM PEAK		Aug 3 PM		Jan 1 AM

HEATING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Heating Peak)



COOLING SYSTEM PSYCHROMETRICS (Airstream Temperatures at Time of Cooling Peak)