FORM R405-2020

20

# FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

| | | | |
|---|---|---|---|
| Project Name: | Pam Seely | Builder Name: | |
| Street: | 343 SW Federal Court | Permit Office: | Columbia County |
| City, State, Zip: | Ft White , FL , 32038 | Permit Number: | |
| Owner: | | Jurisdiction: | |
| Design Location: | FL, Gainesville | County: | Columbia (Florida Climate Zone 2 ) |

| | | | | |
|---|---|---|---|---|
| 1. New construction or existing | New (From Plans) | | | |
| 2. Single family or multiple family | Detached | | | |
| 3. Number of units, if multiple family | 1 | | | |
| 4. Number of Bedrooms | 2 | | | |
| 5. Is this a worst case? | No | | | |
| 6. Conditioned floor area above grade (ft²) | 960 | | | |
| Conditioned floor area below grade (ft²) | 0 | | | |
| 7. Windows (112.0 sqft.) | Description | | Area | |
| a. U-Factor: | Dbl, U=0.36 | | 112.00 ft² | |
| SHGC: | SHGC=0.25 | | | |
| b. U-Factor: | N/A | | ft² | |
| SHGC: | | | | |
| c. U-Factor: | N/A | | ft² | |
| SHGC: | | | | |
| Area Weighted Average Overhang Depth: | | | 5.429 ft. | |
| Area Weighted Average SHGC: | | | 0.250 | |
| 8. Skylights | | | Area | |
| c. U-Factor:(AVG) | N/A | | ft² | |
| SHGC(AVG): | N/A | | | |
| 9. Floor Types (960.0 sqft.) | | Insulation | Area | |
| a. Raised Floor | | R=19.0 | 480.00 ft² | |
| b. Floor Over Other Space | | R=19.0 | 480.00 ft² | |
| c. N/A | | R= | ft² | |

| | | | |
|---|---|---|---|
| 10. Wall Types (1380.0 sqft.) | Insulation | Area | |
| a. Frame - Wood, Exterior | R=13.0 | 1380.00 ft² | |
| b. N/A | R= | ft² | |
| c. N/A | R= | ft² | |
| d. N/A | R= | ft² | |
| 11. Ceiling Types (480.0 sqft.) | Insulation | Area | |
| a. Roof Deck (Unvented) | R=30.0 | 480.00 ft² | |
| b. N/A | R= | ft² | |
| c. N/A | R= | ft² | |
| 12. Ducts | | R ft² | |
| 13. Cooling systems | kBtu/hr | Efficiency | |
| a. Central Unit | 10.0 | SEER:14.00 | |
| 14. Heating systems | kBtu/hr | Efficiency | |
| a. Electric Heat Pump | 8.5 | HSPF:8.20 | |
| 15. Hot water systems | | | |
| a. Electric | | Cap: 40 gallons | |
| | | EF: 0.920 | |
| b. Conservationfeatures | | | |
| None | | | |
| 16. Credits | | CV, Pstat | |

Glass/Floor Area: 0.117

Total Proposed Modified Loads: 29.73

Total Baseline Loads: 35.12

**PASS**

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code.

PREPARED BY: Will C Thy

DATE: 4 / 19 / 2022

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: _____

DATE: _____

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.

BUILDING OFFICIAL: _____

DATE: _____

**- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.3.2.1.**

**- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and this project requires an envelope leakage test report with envelope leakage no greater than 5.00 ACH50 (R402.4.1.2).**

**- Proposed Qn of NAN exceeds the performance method default limit of 0.08 and therefore does not require duct testing. R405 .2.3**

COLUMBIA COUNTY BUILDING DEPARTMENT Reviewed for FILE COPY Florida Compliance PLANS EXAMINER

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# INPUT SUMMARY CHECKLIST REPORT

## PROJECT

| | | | | | |
|---|---|---|---|---|---|
| Title: | Pam Seely | Bedrooms: | 2 | Address Type: | Street Address |
| Building Type: | User | Conditioned Area: | 960 | Lot # | |
| Owner Name: | | Total Stories: | 2 | Block/Subdivision: | |
| # of Units: | 1 | Worst Case: | No | PlatBook: | |
| Builder Name: | | Rotate Angle: | 0 | Street: | 343 SW Federal Court |
| Permit Office: | Columbia County | Cross Ventilation: | Yes | County: | Columbia |
| Jurisdiction: | | Whole House Fan: | No | City, State, Zip: | Ft White , FL , 32038 |
| Family Type: | Detached | | | | |
| New/Existing: | New (From Plans) | | | | |
| Comment: | | | | | |

## CLIMATE

| √ | Design Location | TMY Site | Design Temp 97.5 % | Design Temp 2.5 % | Int Design Temp Winter | Int Design Temp Summer | Heating Degree Days | Design Moisture | Daily Temp Range |
|---|---|---|---|---|---|---|---|---|---|
| _____ | FL, Gainesville | FL_GAINESVILLE_REGI | 32 | 92 | 70 | 75 | 1305.5 | 51 | Medium |

## BLOCKS

| Number | Name | Area | Volume |
|---|---|---|---|
| 1 | Block1 | 960 | 7200 |

## SPACES

| Number | Name | Area | Volume | Kitchen | Occupants | Bedrooms | Infil ID | Finished | Cooled | Heated |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1st Floor | 480 | 3840 | Yes | 2 | 0 | 1 | Yes | Yes | Yes |
| 2 | 2nd Floor | 480 | 3360 | No | 3 | 2 | 1 | Yes | Yes | Yes |

## FLOORS

| √ | # | Floor Type | Space | Perimeter | Perimeter R-Value | Area | Joist R-Value | Tile | Wood | Carpet |
|---|---|---|---|---|---|---|---|---|---|---|
| _____ | 1 | Raised Floor | 1st Floor | ---- | ---- | 480 ft² | 19 | 0 | 0 | 1 |
| _____ | 2 | Floor Over Other Space | 2nd Floor | ---- | ---- | 480 ft² | 19 | 0 | 0 | 1 |

## ROOF

| √ | # | Type | Materials | Roof Area | Gable Area | Roof Color | Rad Barr | Solar Absor. | SA Tested | Emitt | Emitt Tested | Deck Insul. | Pitch (deg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| _____ | 1 | Gable or shed | Metal | 679 ft² | 240 ft² | Medium | N | 0.96 | No | 0.9 | No | 30 | 45 |

## ATTIC

| √ | # | Type | Ventilation | Vent Ratio (1 in) | Area | RBS | IRCC |
|---|---|---|---|---|---|---|---|
| _____ | 1 | Full attic | Unvented | 0 | 480 ft² | N | N |

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# INPUT SUMMARY CHECKLIST REPORT

## CEILING

| √ | # | Ceiling Type | Space | R-Value | Ins Type | Area | Framing Frac | Truss Type |
|---|---|---|---|---|---|---|---|---|
| ____ | 1 | Under Attic (Unvented) | 2nd Floor | 38 | Double Batt | 480 ft² | 0.11 | Wood |

## WALLS

| √ | # | Ornt | Adjacent To | Wall Type | Space | Cavity R-Value | Width Ft | Width In | Height Ft | Height In | Area | Sheathing R-Value | Framing Fraction | Solar Absor. | Below Grade% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ____ | 1 | S | Exterior | Frame - Wood | 1st Floor | 13 | 30 | | 8 | | 240.0 ft² | | 0.23 | 0.75 | 0 |
| ____ | 2 | E | Exterior | Frame - Wood | 1st Floor | 13 | 16 | | 8 | | 128.0 ft² | | 0.23 | 0.75 | 0 |
| ____ | 3 | N | Exterior | Frame - Wood | 1st Floor | 13 | 30 | | 8 | | 240.0 ft² | | 0.23 | 0.75 | 0 |
| ____ | 4 | W | Exterior | Frame - Wood | 1st Floor | 13 | 16 | | 8 | | 128.0 ft² | | 0.23 | 0.75 | 0 |
| ____ | 5 | S | Exterior | Frame - Wood | 2nd Floor | 13 | 30 | | 7 | | 210.0 ft² | | 0.23 | 0.75 | 0 |
| ____ | 6 | E | Exterior | Frame - Wood | 2nd Floor | 13 | 16 | | 7 | | 112.0 ft² | | 0.23 | 0.75 | 0 |
| ____ | 7 | N | Exterior | Frame - Wood | 2nd Floor | 13 | 30 | | 7 | | 210.0 ft² | | 0.23 | 0.75 | 0 |
| ____ | 8 | W | Exterior | Frame - Wood | 2nd Floor | 13 | 16 | | 7 | | 112.0 ft² | | 0.23 | 0.75 | 0 |

## DOORS

| √ | # | Ornt | Door Type | Space | Storms | U-Value | Width Ft | Width In | Height Ft | Height In | Area |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ____ | 1 | S | Insulated | 1st Floor | None | .46 | 3 | | 6 | 8 | 20 ft² |

## WINDOWS

Orientation shown is the entered, Proposed orientation.

| √ | # | Ornt | Wall ID | Frame | Panes | NFRC | U-Factor | SHGC | Imp | Area | Overhang Depth | Overhang Separation | Int Shade | Screening |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ____ | 1 | S | 1 | Vinyl | Low-E Double | Yes | 0.36 | 0.25 | N | 18.0 ft² | 9 ft 6 in | 0 ft 6 in | None | None |
| ____ | 2 | S | 1 | Metal | Low-E Double | Yes | 0.36 | 0.25 | N | 40.0 ft² | 9 ft 6 in | 0 ft 6 in | None | None |
| ____ | 3 | E | 2 | Vinyl | Low-E Double | Yes | 0.36 | 0.25 | N | 6.0 ft² | 1 ft 6 in | 0 ft 6 in | None | None |
| ____ | 4 | N | 3 | Vinyl | Low-E Double | Yes | 0.36 | 0.25 | N | 9.0 ft² | 1 ft 0 in | 7 ft 0 in | None | None |
| ____ | 5 | E | 6 | Vinyl | Low-E Double | Yes | 0.36 | 0.25 | N | 15.0 ft² | 1 ft 0 in | 2 ft 0 in | None | None |
| ____ | 6 | W | 8 | Vinyl | Low-E Double | Yes | 0.36 | 0.25 | N | 12.0 ft² | 1 ft 0 in | 2 ft 0 in | None | None |
| ____ | 7 | W | 4 | Vinyl | Low-E Double | Yes | 0.36 | 0.25 | N | 12.0 ft² | 1 ft 0 in | 8 ft 0 in | None | None |

## INFILTRATION

| # | Scope | Method | SLA | CFM 50 | ELA | EqLA | ACH | ACH 50 |
|---|---|---|---|---|---|---|---|---|
| 1 | Wholehouse | Proposed ACH(50) | .000238 | 600 | 32.92 | 61.8 | .126 | 5 |

## HEATING SYSTEM

| √ | # | System Type | Subtype | Speed | Efficiency | Capacity | Block | Ducts |
|---|---|---|---|---|---|---|---|---|
| ____ | 1 | Electric Heat Pump/ | None | Single | HSPF:8.2 | 8.49 kBtu/hr | 1 | Ductless |

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# INPUT SUMMARY CHECKLIST REPORT

## COOLING SYSTEM

| √ | # | System Type | Subtype | Subtype | Efficiency | Capacity | Air Flow | SHR | Block | Ducts |
|---|---|---|---|---|---|---|---|---|---|---|
| ____ | 1 | Central Unit/ | None | Single | SEER: 14 | 10.01 kBtu/hr | 300 cfm | 0.7 | 1 | Ductless |

## HOT WATER SYSTEM

| √ | # | System Type | SubType | Location | EF | Cap | Use | SetPnt | Conservation |
|---|---|---|---|---|---|---|---|---|---|
| ____ | 1 | Electric | None | 1st Floor | 0.92 | 40 gal | 40 gal | 120 deg | None |

## SOLAR HOT WATER SYSTEM

| √ | FSEC Cert # | Company Name | System Model # | Collector Model # | Collector Area | Storage Volume | FEF |
|---|---|---|---|---|---|---|---|
| ____ | None | None | | | ft² | | |

## TEMPERATURES

Programable Thermostat: Y

Ceiling Fans:

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cooling | [ ] | [ ] | [ ] | [ ] | [ ] | [X] | [X] | [X] | [X] | [ ] | [ ] | [ ] |
| Heating | [X] | [X] | [X] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [ ] | [X] | [X] |
| Venting | [ ] | [ ] | [X] | [X] | [ ] | [ ] | [ ] | [ ] | [ ] | [X] | [X] | [ ] |

Thermostat Schedule: HERS 2006 Reference

| Schedule Type | | Hours 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cooling (WD) | AM | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 80 | 80 | 80 | 80 |
| | PM | 80 | 80 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Cooling (WEH) | AM | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| | PM | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 |
| Heating (WD) | AM | 66 | 66 | 66 | 66 | 66 | 68 | 68 | 68 | 68 | 68 | 68 | 68 |
| | PM | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 66 | 66 |
| Heating (WEH) | AM | 66 | 66 | 66 | 66 | 66 | 68 | 68 | 68 | 68 | 68 | 68 | 68 |
| | PM | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 66 | 66 |

## MASS

| Mass Type | Area | Thickness | Furniture Fraction | Space |
|---|---|---|---|---|
| Default(8 lbs/sq.ft. | 0 ft² | 0 ft | 0.3 | Main |

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# ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

## ESTIMATED ENERGY PERFORMANCE INDEX* = 85

The lower the EnergyPerformance Index, the more efficient the home.

343 SW Federal Court, Ft White, FL, 32038

| | | | |
|---|---|---|---|
| 1. New construction or existing | | New (From Plans) | |
| 2. Single family or multiple family | | Detached | |
| 3. Number of units, if multiple family | | 1 | |
| 4. Number of Bedrooms | | 2 | |
| 5. Is this a worst case? | | No | |
| 6. Conditioned floor area (ft²) | | 960 | |
| 7. Windows** | Description | | Area |
| a. U-Factor: | Dbl, U=0.36 | | 112.00 ft² |
| SHGC: | SHGC=0.25 | | |
| b. U-Factor: | N/A | | ft² |
| SHGC: | | | |
| c. U-Factor: | N/A | | ft² |
| SHGC: | | | |
| d. U-Factor: | N/A | | ft² |
| SHGC: | | | |
| Area Weighted Average Overhang Depth: | | | 5.429 ft. |
| Area Weighted Average SHGC: | | | 0.250 |
| 8. Skylights | Description | | Area |
| a. U-Factor(AVG): | N/A | | ft² |
| SHGC(AVG): | N/A | | |
| 9. Floor Types | | Insulation | Area |
| a. Raised Floor | | R=19.0 | 480.00 ft² |
| b. Floor Over Other Space | | R=19.0 | 480.00 ft² |
| c. N/A | | R= | ft² |

| | | |
|---|---|---|
| 10. Wall Type and Insulation | Insulation | Area |
| a. Frame - Wood, Exterior | R=13.0 | 1380.00 ft² |
| b. N/A | R= | ft² |
| c. N/A | R= | ft² |
| d. N/A | R= | ft² |
| 11. Ceiling Type and insulation level | Insulation | Area |
| a. Roof Deck (Unvented) | R=30.0 | 480.00 ft² |
| b. N/A | R= | ft² |
| c. N/A | R= | ft² |
| 12. Ducts, location & insulation level | | R ft² |
| 13. Cooling systems | kBtu/hr | Efficiency |
| a. Central Unit | 10.0 | SEER:14.00 |
| 14. Heating systems | kBtu/hr | Efficiency |
| a. Electric Heat Pump | 8.5 | HSPF:8.20 |
| 15. Hot water systems | | |
| a. Electric | | Cap: 40 gallons |
| | | EF: 0.92 |
| b. Conservationfeatures | | |
| None | | |
| Credits (Performance method) | | CV, Pstat |

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

Builder Signature: _____ Date: _____

Address of New Home: _____ City/FL Zip: _____


*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida Energy Rating. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

**Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

# Envelope Leakage Test Report (Blower Door Test)
## Residential Prescriptive, Performance or ERI Method Compliance
## 2020 Florida Building Code, Energy Conservation, 7th Edition

| Jurisdiction: | Permit #: |
|---|---|

**Job Information**

| Builder: | Community: | Lot: NA |
|---|---|---|
| Address: 343 SW Federal Court | | |
| City: Ft White | State: FL | Zip: 32038 |

**Air Leakage Test Results** *Passing results must meet either the Performance, Prescriptive, or ERI Method*

○ **PRESCRIPTIVE METHOD-**The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 7 air changes per hour at a pressure of 0.2 inch w.g. (50 Pascals) in Climate Zones 1 and 2.

○ **PERFORMANCE or ERI METHOD-**The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding the selected ACH(50) value, as shown on Form R405-2020 (Performance) or R406-2020 (ERI), section labeled as infiltration, sub-section ACH50.

*ACH(50) specified on Form R405-2020-Energy Calc (Performance) or R406-2020 (ERI):* 5.000

$$\frac{\text{CFM(50)}}{\text{\_\_\_\_\_}} \times 60 \div \frac{7200}{\text{Building Volume}} = \frac{\text{\_\_\_\_\_}}{\text{ACH(50)}}$$

☐ **PASS**

☐ When ACH(50) is less than 3, Mechanical Ventilation installation must be verified by building department.

Method for calculating building volume:

○ Retrieved from architectural plans

● Code software calculated

○ Field measured and calculated

**R402.4.1.2 Testing.** Testing shall be conducted in accordance with ANSI/RESNET/ICC 380 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Testing shall be conducted by either individuals as defined in Section 553.993(5) or (7) *Florida Statues* or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i) or an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official*. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*.

During testing:
1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, back draft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open.
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.

**Testing Company**

Company Name: _____ Phone: _____

I hereby verify that the above Air Leakage results are in accordance with the 2020 7th Edition Florida Building Code Energy Conservation requirements according to the compliance method selected above.

Signature of Tester: _____ Date of Test: _____

Printed Name of Tester: _____

License/Certification #: _____ Issuing Authority: _____