

### **Eligibility Requirements**

The following site-built or modular <sup>41</sup> homes are eligible to earn the ENERGY STAR:

- Detached dwelling units <sup>22</sup> (e.g. single family homes); OR
- Dwelling units <sup>22</sup> in any multifamily building with 4 units or fewer; OR
- Dwelling units <sup>22</sup> in multifamily buildings with 3 stories or fewer above-grade <sup>33,44</sup>; OR
- Dwelling units <sup>22</sup> in multifamily buildings with 4 or 5 stories above-grade <sup>33,44</sup> where dwelling units occupy 80% or more of the occupiable <sup>44</sup> square footage of the building <sup>55,6</sup>. When evaluating mixed–use buildings for eligibility, exclude commercial / retail space when assessing whether the 80% threshold has been met.

Dwelling units <sup>2</sup> in multifamily buildings that are not eligible to earn the ENERGY STAR through the Certified Homes Program may be eligible through the Multifamily High Rise Program. For more information, visit: <u>www.energystar.gov/mfhr/eligibility</u>For information about other ENERGY STAR residential new construction programs, visit www.energystar.gov/newhomesrequirements.

Note that compliance with these requirements is not intended to imply compliance with all local code requirements that may be applicable to the home to be built. <sup>76</sup>

#### Partnership, Training, and Credentialing Requirements

Builders, Raters, and HVAC contractors must meet tThe following requirements must be met prior to certifying homes:

- Builders are required to sign an ENERGY STAR Partnership Agreement and complete the online Version 3 Builder Orientation, which can be found at <u>www.energystar.gov/homesPA</u>.
- HVAC installing contractors are required to be credentialed by an EPA-recognized HVAC Quality Installation Training and Oversight Organization (H-QUITO) for homes certified using Path B in Exhibit 2. An explanation of this process can be found at www.energystar.gov/newhomesHVAC.
- Energy Rating Companies (e.g., rater companies and Providers<sup>7</sup>) are required to sign an ENERGY STAR Partnership Agreement, which can be found at www.energystar.gov/homesPA, and RatersCertified Raters and Field Approved Inspectors<sup>8</sup> are required to complete <u>EPA-recognized</u> training, which can be found at <u>www.energystar.gov/newhomestraining</u>.

#### **ENERGY STAR Certification Process-**<sup>8</sup>

- The certification process provides flexibility to select a custom combination of measures for each home that is equivalent in performance to the minimum requirements of the ENERGY STAR Reference Design Home, Exhibit 1, as assessed through energy modeling. <u>An EPA-rRecognized Verification Oversight Organization (VOO)'s Approved Software Rating Tool shall automaticallyUse a Home Energy Rating Software program accredited by an EPA Approved Verification Oversight Organization (VOO) to determine the ENERGY STAR ERI Target, which is the highest ERI value that each rated home may achieve to earn the ENERGY STAR.<sup>99</sup>
  </u>
- 2. Using the same software program, configure the preferred set of efficiency measures for the home to be certified and verify that the resulting ERI meets or exceeds the ENERGY STAR ERI Target, as determined in Step 1.

Note that, regardless of the measures selected, the Mandatory Requirements for All Certified Homes in Exhibit 2 are also required and impose certain constraints on the efficiency measures selected (e.g., insulation levels, insulation installation quality, window performance, duct leakage). Furthermore, on-site power generation may not be used to meet the ENERGY STAR ERI Target.

- 3. Construct the home using the measures selected in Step 2 and the Mandatory Requirements for All Certified Homes, Exhibit 2.
- 4. Using a Rater, verify that all requirements have been met in accordance with the Mandatory Requirements for All Certified Homes and with the on-site inspection procedures for minimum rated features of an EPA-<u>Approved\_rRecognized</u> VOO.<sup>408,10</sup> For modular homes, a Rater must verify any requirement in the plant not able to be verified on-site because a feature will be concealed prior to shipment. Finally, register the rated home with the same EPA-<u>Approved\_rRecognized</u> VOO. The Rater is required to keep electronic or hard copies of the completed and signed National Rater checklists and the National HVAC Design Report.

The Rater must review all items on the National Rater checklists. Raters are expected to use their experience and discretion to verify that the overall intent of each inspection checklist item has been met (i.e., identifying major defects that undermine the intent of the checklist item versus identifying minor defects that the Rater may deem acceptable).

In the event that a Rater finds an item that is inconsistent with the intent of the checklists, the home cannot earn the ENERGY STAR until the item is corrected. If correction of the item is not possible, the home cannot earn the ENERGY STAR. In the event that an item on a National Rater checklist cannot be inspected by the Rater, the home also cannot earn the ENERGY STAR. The only exceptions to this rule are in the Thermal Enclosure System Section of the National Rater Field Checklist, where the builder may assume responsibility for verifying a maximum of eight items. This option shall only be used at the discretion of the Rater. When exercised, the builder's responsibility will be formally acknowledged by the builder signing the checklist for the item(s) that they verified.

In the event that a Rater is not able to determine whether an item is consistent with the intent (e.g., an alternative method of meeting a checklist requirement has been proposed), then the Rater shall consult their Provider. If the Provider also cannot make this determination, then the Rater or Provider shall report the issue to EPA prior to project completion at: energystarhomes@energystar.gov and will typically-receive an initial response within 5 business days. If EPA believes the current program requirements are sufficiently clear to determine whether the intent has been met, then this guidance will be provided to the partner and enforced beginning with the house in question. In contrast, if EPA believes the program requirements require revisions to make the intent clear, then this guidance will be provided to the partner but only enforced for homes permitted after a specified transition period after the release of the revised program requirements, typically 60 days in length.



This process will allow EPA to make formal policy decisions as partner questions arise and to disseminate these policy decisions through the <u>Policy Record and the</u> periodic release of revised program documents to ensure consistent application of the program requirements.

### Exhibit 1: ENERGY STAR Reference Design Home 4411

The ENERGY STAR Reference Design Home is the set of efficiency features modeled to determine the ENERGY STAR ERI Target for each home pursuing certification. Therefore, while the features below are not mandatory, if they are not used then other measures will be needed to achieve the ENERGY STAR ERI Target. In addition, note that the Mandatory Requirements for All Certified Homes, Exhibit 2, contain additional requirements such as total duct leakage limits, minimum allowed insulation levels, and minimum allowed fenestration performance. Therefore, EPA recommends that partners review the documents in Exhibit 2 prior to selecting measures.

Cooling Equipment (Where Provided) <ul> <li>Cooling equipment modeled at the applicable efficiency levels below:</li> <li> <ul> <li>13 SEER AC.</li> <li>Heat pump (See Heating Equipment)</li> <li>Bo AFUE as fumace,</li> <li>80 AFUE bolier,</li> <li>82 NSPF / 15 SEER / 12 EER air-source heat pump with electric or dual-fuel backup</li> <li>92 FAFUE ENERGY STAR gas fumace,</li> <li>80 AFUE bolier,</li> <li>82 ASPF / 15 SEER / 12 EER air-source heat pump with electric or dual-fuel backup</li> <li>C2 4: 8.3 FMSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup</li> <li>C2 7: 9.3 GCOP / 17.1 EER gir-source w/ electric or dual-fuel backup</li> <li>C2 7: 9.3 GCOP / 17.1 EER gir-source w/ electric or dual-fuel backup</li> <li>C2 7: 3.3 CCOP / 17.1 EER gir-source w/ electric or dual-fuel backup</li> <li>C2 7: 3.3 CCOP / 17.1 EER gir-source w/ electric or dual-fuel backup</li> <li>C2 7: 3.3 CCOP / 17.1 EER gir-source w/ electric or dual-fuel backup</li> <li>C2 7: 3.3 CCOP / 17.1 EER gir-source w/ electric or dual-fuel backup</li> <li>C2 7: 3.3 CCOP / 17.1 EER gir-source w/ electric or dual-fuel backup</li> <li>C2 7: 3.3 CCOP / 17.1 EER gir-source w/ electric or dual-fuel backup</li> <li>C2 7: 3.3 CCOP / 17.1 EER gir-source w/ electric or dual-fuel backup</li> <li>C2 7: 3.3 CCOP / 17.1 EER gir-source w/ electric or dual-fuel backup</li> <li>C2 7: 3.3 CCOP / 17.1 EER gir-source w/ electric or dual-fuel backup</li> <li>C2 7: 3.3 CCOP / 17.1 EER gir-source w/ electric or dual-fuel backup</li> <li>C2 7</li></ul></li></ul>		9 IECC Zones 1,2,3) <sup>4212</sup>	Mixed	and Cold Climates (20	109 IECC Zones 4,5,6	5,7,8) +=12		
<ul> <li>15 SEER / 12 EER AC,</li> <li>Heat pump (See Heating Equipment)</li> <li>Heating Equipment modeled at the applicable efficiency levels below, dependent on fuel and system type:</li> <li>80 AFUE gas furnace,</li> <li>80 AFUE oil furnace,</li> <li>80 AFUE oil furnace,</li> <li>80 AFUE boller,</li> <li>92 AFUE ENERGY STAR gas furnace,</li> <li>93 AFUE boller,</li> <li>93 AFUE boller,</li> <li>92 AFUE ENERGY STAR oil furnace,</li> <li>93 AFUE boller,</li> <li>93 AFUE boller,</li> <li>93 AFUE boller,</li> <li>94 AFUE ALSHOP / 15 SEER / 12 EER air-source will electric or dual-fuel backup</li> <li>92 CZ 4: 8, 51 HSPF / 15 SEER / 12 EER air-source will electric or dual-fuel backup</li> <li>92 CZ 4: 8, 51 HSPF / 15 SEER / 12 EER air-source will electric or dual-fuel backup</li> <li>92 CZ 4: 8, 51 HSPF / 15 SEER / 12 EER air-source will electric or dual-fuel backup</li> <li>92 CZ 4: 8, 51 HSPF / 15 SEER / 12 EER air-source will electric or dual-fuel backup</li> <li>92 CZ 4: 8, 51 HSPF / 15 SEER / 12 EER air-source will electric or dual-fuel backup</li> <li>92 CZ 4: 8, 51 HSPF / 15 SEER / 12 EER air-source will electric or dual-fuel backup</li> <li>92 CZ 4: 8, 30 HSPF / 15 SEER / 12 EER air-source will electric or dual-fuel backup</li> <li>92 CZ 4: 8, 30 HSPF / 15 SEER / 12 EER air-source will electric or dual-fuel backup</li> <li>92 CZ 4: 8, 30 COP / 17.1 EER ground-source will electric or dual-fuel backup</li> <li>92 CZ 4: 8, 30 COP / 17.1 EER ground-source will electric or dual-fuel backup</li> <li>92 CZ 4: 8, 30 COP / 17.1 EER ground-source will electric or dual-fuel backup</li> <li>92 AFUE ENERGY STAR windows and doors modeled below:</li> <li>Window U-Value:</li> <li>0.40 in CZs 1,2</li> <li>0.23 in CZ 3</li> <li>0.30 in CZ 4</li> <li>0.27 in CZs 5,6,7,8</li> <li>Window SHGC:</li> <li>0.25 in CZs 1,2</li> <li>0.25 in CZ 5 in CZs 1,2,3; 0.40 in CZs 4,5,6,7,8</li> </ul> Water Heater Div U-Value: <ul> <li>0.40 al = 0.63 EF</li> <li>40 Gal = 0.61 EF</li> <li>50 Gal = 0.57 EF</li> <li>70 Gal = 0.55</li></ul>	Cooling Equipment (Where	Provided)						
<ul> <li>Heat pump (See Heating Equipment) <ul> <li>Heat pump (See Heating Equipment)</li> </ul> </li> <li>Heat pump (See Heating Equipment)</li> </ul> <li>Heating equipment modeled at the applicable efficiency levels below, dependent on fuel and system type: <ul> <li>80 AFUE gas furnace,</li> <li>80 AFUE biller,</li> <li>82 AFUF 15 SEER /12 EER air-source heat pump with efficiency as follows: <ul> <li>C2 4: 8.5 HSPF / 15 SEER /12 EER air-source w/ electric or dual-fuel backup</li> <li>22 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7-8: 3.0 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7-8: 3.0 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>Infitration rates modeled as follows:</li> <li>Mindow U-Value: 0.40 in CZs 1.2 0.20 in CZ 3 0.30 in CZ 4 0.27 in CZs 5.67.8</li> </ul> </li> <li>Window SHGC: 0.25 in CZs 1.2, 0.26 in CZ 3 0.40 in CZ 4 4.81,87.8</li> <li>Doro V-Value: Opaque: 0.17 st/k lite: 0.25 to CZ 1.2.3; 0.40 in CZs 4.5.6.7.8</li> </ul> </li> <li>Water Heaster <ul> <li>DHW equipment modeled with the following efficiency levels as applicable:</li> <li>Gas: 30 Gal = 0.35 EF 40 Gal = 0.35 EF 50 Gal = 0.59 EF 6</li></ul></li>	<ul> <li>Cooling equipment model</li> </ul>	led at the applicable efficiency leve	els below:					
Heating Equipment         • Heating equipment modeled at the applicable efficiency levels below, dependent on fuel and system type:         • 80 AFUE gas furnace,         • 80 AFUE di furnace,         • 80 AFUE boiler,         • 82 AFUE boiler,         • 82 AFUE boiler,         • 82 AFUE boiler,         • 90 AFUE di furnace,         • 90 AFUE boiler,         • 82 AFUE ENERGY STAR di furnace,         • 90 AFUE boiler,         • 82 AFUE ENERGY STAR di furnace,         • 90 AFUE boiler,         • 18 dat pump, with difficincy as follows:         • 22 4: 85 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup         • 02 5: 9.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup         • 10 sulation levels modeled to 2012 IECC levels and Grade 1 installation per ANSI / RESNET / ICC Standard 301. <sup>19</sup> • Insulation levels modeled to 2012 IECC levels and Grade 1 installation per ANSI / RESNET / ICC Standard 301. <sup>19</sup> • Insulation levels modeled as follows:         • Mindow U-Value:       0.40 in C2s 1.2       0.30 in C2 3       0.30 in C2 4       0.27 in C2s 5,6,7,8         Window SHGC:       0.25 in C2s 1.2       0.26 in C2 3       0.40 in C2 4       Any in C2s 5,6,7,8         Door U-Value:       Opaque: 0.17       \$\style ite: 0.25       \$\stite: 0.25 in C2 s 1,2,3; 0.40 in C2s 4,5,6,	• 15 SEER / 12 EER AC,		• 13 SEER AC,					
<ul> <li>Heating equipment modeled at the applicable efficiency levels below, dependent on fuel and system type:</li> <li>80 AFUE gas furnace,</li> <li>80 AFUE oil furnace,</li> <li>80 AFUE oil furnace,</li> <li>80 AFUE oil furnace,</li> <li>80 AFUE oiler,</li> <li>82 HSPF / 15 SEER / 12 EER air-source heat pump with electric or dual-fuel backup</li> <li>22 4: 85 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup</li> <li>22 5: 9.25 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup</li> <li>C2 6: 9.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup</li> <li>C2 7: 8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 9.25 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup</li> <li>C2 8: 9.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup</li> <li>C2 8: 0.95 HSC: 0.25 in C2s 1.2</li> <li>0.20 in C2 3</li> <li>0.30 in C2 4</li> <li>0.40 in C2 4</li> <li>0.40 in C2 4</li> <li>0.40 in C2 5</li> <li>0.55 in C2 5</li> <li>0.56 in C2 5</li> <li>0.50 in C2 5</li></ul>			Heat pump (See	Heat pump (See Heating Equipment)				
<ul> <li>80 AFUE gas furnace,</li> <li>80 AFUE oil furnace,</li> <li>80 AFUE boller,</li> <li>82 AFUE / 15 SEER / 12 EER air-source heat pump with electric or dual-fuel backup</li> <li>82 AFUE / 15 SEER / 12 EER air-source heat pump with electric or dual-fuel backup</li> <li>82 AFUE / 15 SEER / 12 EER air-source will electric or dual-fuel backup</li> <li>83 AFUE ENERGY STAR gas boiler,</li> <li>84 AFUE ENERGY STAR gas boiler,</li> <li>86 AFUE</li></ul>	Heating Equipment							
<ul> <li>80 AFUE oil furnace,</li> <li>80 AFUE boller,</li> <li>90 AFUE boller,</li> <li>90 AFUE ENERGY STAR oil furnace,</li> <li>90 AFUE ENERGY STAR oil furnace,</li> <li>90 AFUE ENERGY STAR oil boller,</li> <li>86 AFUE ENERGY STAR oil boller,</li> <li>96 Aftar windows and doors modeled, as illustrated below:</li> <li>10 Midow U-Value:</li> <li>90 Ague: 0.17 ≤½ lite: 0.25 &gt;½ lite: 0.30</li> <li>90 CG U-Value:</li> <li>90 aque: Any ≤½ lite: 0.25 &gt;½ lite: 0.30</li> <li>90 CG STAGC:</li> <li>90 aque: Any ≤½ lite: 0.25 &gt;½ lite: 0.25 in CZs 1.2,3; 0.40 in CZs 4,5,6,7,8</li> </ul> Water Heater OHV equipment modeled with the following efficiency levels as applicable: Gas: <ul> <li>30 Gal = 0.63 EF</li> <li>40 Gal = 0.61 EF</li> <li>50 Gal = 0.59 EF</li> <li>60 Gal = 0.57 EF</li> <li>70 Gal = 0.55 EF</li> <li>80 Gal = 0.53 EF</li> <li>90 Gal = 0.53 EF</li> <li>50 Gal = 0.51 EF</li> <li>60 Gal = 0.57 EF</li> <li>70 Gal = 0.55 EF</li> <li>80 Gal = 0.53 EF</li> <li>90 Gal = 0.53 EF</li> <li>50</li></ul>	Heating equipment mode	eled at the applicable efficiency lev	vels below, dependent o	on fuel and system type	:			
<ul> <li>80 AFUE boiler,</li> <li>90 AFUE ENERGY STAR gas boiler,</li> <li>82 HSPF / 15 SEER / 12 EER air-source heat pump with electric or dual-fuel backup</li> <li>86 AFUE ENERGY STAR gas boiler,</li> <li>87 AFUE STAR windows and doors modeled, as illustrated below:</li> <li>87 ACH50 in CZs 1,2</li> <li>9.30 in CZ 3</li> <li>9.30 in CZ 4</li> <li>9.27 in CZs 5,6,7,8</li> <li>9.40 in CZs 1,2</li> <li>9.30 in CZ 3</li> <li>9.30 in CZ 4</li> <li>9.27 in CZs 5,6,7,8</li> </ul> Window U-Value: <ul> <li>9.40 in CZs 1,2</li> <li>9.20 in CZ 3</li> <li>9.40 in CZ 4</li> <li>9.71 in CZs 1,2,3</li> <li>9.40 in CZs 4,5,6,7,8</li> </ul> Water Heater Drov U-Value: <ul> <li>9.72 in CZs 4,6,6,7,8</li> <li>9.74 ilte: 0.25</li> <li>9.75 ilte: 0.25</li> <li>9.75 ilte: 0.25 in CZ 3</li> <li>9.40 in CZs 4,5,6,7,8</li> </ul> Water Heater DHW equipment modeled with the following efficiency levels as applicable: <ul> <li>60 Gal = 0.57 EF</li> <li>70 Gal = 0.55 EF</li> <li>80 Gal = 0.53 EF</li> <li>90 Gal = 0.51 EF</li> <li>90 Gal = 0</li></ul>	<ul> <li>80 AFUE gas furnace,</li> </ul>		95 AFUE ENER	GY STAR gas furnace,				
<ul> <li>8.2 HSPF / 15 SEER / 12 EER air-source heat pump with electric or dual-fuel backup</li> <li>86 AFUE ENERGY STAR oil boiler,</li> <li>Heat pump, with efficiency as follows:</li> <li>CZ 4: 8.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup</li> <li>CZ 5: 9.25 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup</li> <li>CZ 6: 9.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup</li> <li>CZ 7:8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>CZ 7:8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>CZ 7:8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>CZ 7:8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>CZ 7:8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>CZ 7:8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>CZ 7:8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>CZ 7:8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>CZ 7:8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>CZ 7:8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>CZ 7:8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>CZ 7:8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>CZ 8: 0.25 in CZ 8: 0.25 in CZ 8: 0.25 in CZ 8: 0.47.8</li> </ul>	<ul> <li>80 AFUE oil furnace,</li> </ul>							
<ul> <li>Heat pump, with efficiency as follows:</li> <li>C2 4: 8.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup</li> <li>C2 6: 9.25 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup</li> <li>C2 6: 9.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>ENERGY STAR windows and doors modeled as illustrated below:</li> <li>Window U-Value: 0.40 in CZs 1.2 0.30 in CZ 3 0.30 in CZ 4 0.27 in CZs 5,6,7,8</li> <li>Dor U-Value: Opaque: 0.17 \$\$ 0.25 in CZ 3 0.40 in CZ 4 Any in CZs 5,6,7,8</li> <li>Mater Heater</li> <li>Obrit Opaque: Any \$\$ 10 Cal = 0.61 EF 50 Cal = 0.55 EF 60 Cal = 0.57 EF 70 Cal = 0.55 EF 80 Cal = 0.53 EF</li> <li>Cas: 30 Cal = 0.53 EF 40 Cal = 0.53 EF 50</li></ul>				0 /				
C2 4: 8.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup C2 5: 9.25 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup C2 6: 9.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup C2 7: 8.3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup Envelope, Windows, & Doors Insulation levels modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC Standard 301. <sup>44</sup> Infiltration rates modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC Standard 301. <sup>44</sup> Insulation levels modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC Standard 301. <sup>44</sup> Insulation levels modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC Standard 301. <sup>44</sup> Insulation levels modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC Standard 301. <sup>44</sup> Insulation levels modeled to 2012 IECC levels and I installation per ANSI / RESNET / ICC Standard 301. <sup>44</sup> Insulation levels modeled to 2012 IECC levels and I installation per ANSI / RESNET / ICC Standard 301. <sup>44</sup> Insulation levels modeled to 2012 IECC levels and I installation per ANSI / RESNET / ICC Standard 301. <sup>44</sup> Insulation levels modeled with the following efficiency levels as applicable: Cas: 0.25 in CZs 1.2, 0.25 in CZs 1.2, 0.40 in CZs 4,5,6,7,8 Mater Heater OHW equipment modeled with the following efficiency levels as applicable: Gas: 0.30 Gal = 0.43 EF 40 Gal = 0.63 EF 50 Gal = 0.59 EF 60 Gal = 0.57 EF 70 Gal = 0.55 EF 80 Gal = 0.53 EF Dift: 30 Gal = 0.55 EF 40 Gal = 0.53 EF 50 Gal = 0.51 EF 60 Gal = 0.49 EF 70 Gal = 0.								
<ul> <li>CZ 5: 9.25 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup.</li> <li>CZ 6: 9.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup.</li> <li>CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup.</li> <li>CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup.</li> <li>CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup.</li> <li>CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup.</li> <li>CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup.</li> <li>CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup.</li> <li>CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup.</li> <li>CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup.</li> <li>Insulation levels modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC Standard 301.<sup>16</sup></li> <li>Infiltration rates modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC Standard 301.<sup>16</sup></li> <li>Infiltration rates modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC Standard 301.<sup>16</sup></li> <li>Infiltration rates modeled as follows: <ul> <li>4 ACH50 in CZs 1.2</li> <li>3 ACH50 in CZs 3.4.5.6.7.8</li> </ul> </li> <li>ENERGY STAR windows and doors modeled, as illustrated below: <ul> <li>Window U-Value:</li> <li>0.4 ACH50 in CZs 1.2</li> <li>0.25 in CZ 3</li> <li>0.40 in CZ 4</li> <li>Any in CZs 5.6.7.8</li> </ul> </li> <li>Door U-Value: Opaque: 0.17 \$\science y \science is 0.25 in CZ 1.2.3; 0.40 in CZs 4.5.6.7.8</li> <li>Water Heater</li> <li>DHW equipment modeled with the following efficiency levels as applicable:</li> <li>Gas: 30 Gal = 0.63 EF 40 Gal = 0.61 EF 50 Gal = 0.59 EF 60 Gal = 0.57 EF 70 Gal = 0.55 EF 80 Gal = 0.53 EF 60 Gal = 0.51 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 E</li></ul>		*P		-	air source w/ electric	or dual fuel back		
<ul> <li>CZ 6: 9.5 HSPF / 15 SEER / 12 EER air-source w/ electric or dual-fuel backup.</li> <li>CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>CZ 7-8: 3.6 COP / 17.1 EER ground-source w/ electric or dual-fuel backup</li> <li>Envelope, Windows, &amp; Doors</li> <li>Insulation levels modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC Standard 301.<sup>13</sup></li> <li>Infiltration rates modeled as follows: <ul> <li><u>4 ACH50 in CZs 1,2</u></li> <li>3 ACH50 in CZs 3,4,5,6,7,8</li> </ul> </li> <li>ENERGY STAR windows and doors modeled, as illustrated below: <ul> <li>Window U-Value: 0.40 in CZs 1,2</li> <li>0.30 in CZ 3</li> <li>0.30 in CZ 4</li> <li>0.27 in CZs 5,6,7,8</li> </ul> </li> <li>Dor U-Value: Opaque: 0.17 ≤1/2 0.25 in CZ 3</li> <li>0.40 in CZs 1,2,3; 0.40 in CZs 4,5,6,7,8</li> </ul> <li>Water Heater <ul> <li>DHW equipment modeled with the following efficiency levels as applicable:</li> <li>Gas: 30 Gal = 0.63 EF 40 Gal = 0.61 EF 50 Gal = 0.59 EF 60 Gal = 0.57 EF 70 Gal = 0.55 EF 80 Gal = 0.58 EF 60 Gal = 0.99 EF 80 Gal = 0.47 EF 80 Gal = 0.47 EF 80 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0</li></ul></li>								
<ul> <li>Envelope, Windows, &amp; Doors</li> <li>Insulation levels modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC Standard 301.<sup>44</sup></li> <li>Infiltration rates modeled as follows: <ul> <li>4 ACH50 in CZs 1.2</li> <li>3 ACH50 in CZs 3.4,5,6,7,8</li> </ul> </li> <li>ENERGY STAR windows and doors modeled, as illustrated below: <ul> <li>Window U-Value:</li> <li>0.40 in CZs 1,2</li> <li>0.30 in CZ 3</li> <li>0.30 in CZ 4</li> <li>0.27 in CZs 5,6,7,8</li> </ul> </li> <li>Window SHGC:</li> <li>0.25 in CZs 1,2</li> <li>0.25 in CZ 3</li> <li>0.40 in CZ 4 Any in CZs 5,6,7,8</li> </ul> <li>Door U-Value: Opaque: 0.17 \$1/2 lite: 0.25 &gt;1/2 lite: 0.30 <ul> <li>Door SHGC:</li> <li>Opaque: Any</li> <li>1/2 lite: 0.25 &gt;1/2 lite: 0.25 in CZs 1,2,3; 0.40 in CZs 4,5,6,7,8</li> </ul> </li> <li>Water Heater <ul> <li>DHW equipment modeled with the following efficiency levels as applicable:</li> <li>Gas: 30 Gal = 0.63 EF 40 Gal = 0.61 EF 50 Gal = 0.59 EF 60 Gal = 0.57 EF 70 Gal = 0.55 EF 80 Gal = 0.58 EF 60 Gal = 0.91 EF 70 Gal = 0.90 EF 80 Gal = 0.89 EF 61 Gal = 0.91 EF 70 Gal = 0.55 EF 40 Gal = 0.53 EF 50 Gal = 0.51 EF 60 Gal = 0.47 EF 80 Gal = 0.89 EF 61 Gal = 0.51 EF 60 Gal = 0.47 EF 80 Gal = 0.89 EF 61 Gal = 0.51 EF 60 Gal = 0.47 EF 80 Gal = 0.55 EF 40 Gal = 0.53 EF 50 Gal = 0.51 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.47 EF</li></ul></li>								
<ul> <li>Insulation levels modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC Standard 301.<sup>43</sup></li> <li>Infiltration rates modeled as follows: <ul> <li><u>4 ACH50 in CZs 1,2</u></li> <li><u>3 ACH50 in CZs 3,4,5,6,7,8</u></li> </ul> </li> <li>ENERGY STAR windows and doors modeled, as illustrated below: <ul> <li>Window U-Value:</li> <li>0.40 in CZs 1,2</li> <li>0.30 in CZ 3</li> <li>0.30 in CZ 4</li> <li>0.27 in CZs 5,6,7,8</li> </ul> </li> <li>Window SHGC:</li> <li>0.25 in CZs 1,2</li> <li>0.25 in CZ 3</li> <li>0.40 in CZ 4</li> <li>Any in CZs 5,6,7,8</li> </ul> <li>Door U-Value: Opaque: 0.17 </li> <li>5½ lite: 0.25 &gt;½ lite: 0.30</li> <li>Door SHGC: Opaque: Any </li> <li>½ lite: 0.25 &gt;½ lite: 0.25 in CZs 1,2,3; 0.40 in CZs 4,5,6,7,8</li> Water Heater • DHW equipment modeled with the following efficiency levels as applicable: Gas: 30 Gal = 0.63 EF 40 Gal = 0.61 EF 50 Gal = 0.59 EF 60 Gal = 0.57 EF 70 Gal = 0.55 EF 80 Gal = 0.58 EF 60 Gal = 0.91 EF 70 Gal = 0.90 EF 80 Gal = 0.89 EF 01 Cal = 0.91 EF 70 Gal = 0.90 EF 80 Gal = 0.48 EF 01: 30 Gal = 0.55 EF 40 Gal = 0.53 EF 50 Gal = 0.51 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF			• CZ 7-8: 3.6 COF	P / 17.1 EER ground-sou	urce w/ electric or dua	al-fuel backup		
<ul> <li>Insulation levels modeled to 2012 IECC levels and Grade I installation per ANSI / RESNET / ICC Standard 301.<sup>43</sup></li> <li>Infiltration rates modeled as follows: <ul> <li><u>4 ACH50 in CZs 1,2</u></li> <li>3 ACH50 in CZs 3,4,5,6,7,8</li> </ul> </li> <li>ENERGY STAR windows and doors modeled, as illustrated below: <ul> <li>Window U-Value:</li> <li>0.40 in CZs 1,2</li> <li>0.30 in CZ 3</li> <li>0.30 in CZ 4</li> <li>0.27 in CZs 5,6,7,8</li> </ul> </li> <li>Window SHGC:</li> <li>0.25 in CZs 1,2</li> <li>0.25 in CZ 3</li> <li>0.40 in CZ 4</li> <li>Any in CZs 5,6,7,8</li> </ul> <li>Door U-Value: Opaque: 0.17 \$\sqrt{stille: 0.25 &gt; \sqrt{stille: 0.30}}{0.00 SHGC:</li> <li>Opaque: Any \$stille: 0.25 &gt; \sqrt{stille: 0.25 in CZs 1,2,3; 0.40 in CZs 4,5,6,7,8</li> <li>Water Heater <ul> <li>DHW equipment modeled with the following efficiency levels as applicable:</li> <li>Gas: 30 Gal = 0.63 EF 40 Gal = 0.61 EF 50 Gal = 0.59 EF 60 Gal = 0.57 EF 70 Gal = 0.55 EF 80 Gal = 0.53 EF 60 Gal = 0.92 EF 60 Gal = 0.91 EF 70 Gal = 0.90 EF 80 Gal = 0.89 EF 60 Gal = 0.51 EF 60 Gal = 0.91 EF 70 Gal = 0.90 EF 80 Gal = 0.89 EF 60 Gal = 0.51 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 60 Gal = 0.51 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF 70 Gal = 0.47 EF 80 G</li></ul></li>	Envolono Windows & Doo	Are .						
Infiltration rates modeled as follows:         4 ACH50 in CZs 1,2       3 ACH50 in CZs 3,4,5,6,7,8         ENERGY STAR windows and doors modeled, as illustrated below:         Window U-Value:       0.40 in CZs 1,2       0.30 in CZ 3       0.30 in CZ 4       0.27 in CZs 5,6,7,8         Window SHGC:       0.25 in CZs 1,2       0.25 in CZ 3       0.40 in CZ 4       Any in CZs 5,6,7,8         Door U-Value:       Opaque: 0.17       ≤½ lite: 0.25       >½ lite: 0.23, 0.40 in CZs 4,5,6,7,8         Water Heater       Opaque: Any       ≤½ lite: 0.25       >½ lite: 0.25 in CZs 1,2,3; 0.40 in CZs 4,5,6,7,8         Water Heater       OHW equipment modeled with the following efficiency levels as applicable:       Gas:       30 Gal = 0.63 EF       40 Gal = 0.61 EF       50 Gal = 0.59 EF       60 Gal = 0.57 EF       70 Gal = 0.55 EF       80 Gal = 0.38 EF       60 Gal = 0.92 EF       60 Gal = 0.91 EF       70 Gal = 0.90 EF       80 Gal = 0.89 EF       60 Gal = 0.49 EF       70 Gal = 0.47 EF       80 Gal = 0.45 EF         Oli:       30 Gal = 0.55 EF       40 Gal = 0.53 EF       50 Gal = 0.51 EF       60 Gal = 0.49 EF       70 Gal = 0.47 EF       80 Gal = 0.45 EF         Oli:       30 Gal = 0.55 EF       40 Gal = 0.53 EF       50 Gal = 0.51 EF       60 Gal = 0.49 EF       70 Gal = 0.47 EF       80 Gal = 0.45 EF         Oli:       30 Gal = 0.55 EF	Insulation levels modeled	to 2012 IECC levels and Grade I	installation per ANSI / F	RESNET / ICC Standard	d 301. <sup><del>13</del></sup>			
ENERGY STAR windows and doors modeled, as illustrated below:         Window U-Value:       0.40 in CZs 1,2       0.30 in CZ 3       0.30 in CZ 4       0.27 in CZs 5,6,7,8         Window SHGC:       0.25 in CZs 1,2       0.25 in CZ 3       0.40 in CZ 4       Any in CZs 5,6,7,8         Door U-Value:       Opaque: 0.17       ≤½ lite: 0.25       >½ lite: 0.30         Door SHGC:       Opaque: Any       ≤½ lite: 0.25       >½ lite: 0.25 in CZs 1,2,3; 0.40 in CZs 4,5,6,7,8         Nater Heater         OHW equipment modeled with the following efficiency levels as applicable:         Gas:       30 Gal = 0.63 EF       40 Gal = 0.61 EF       50 Gal = 0.59 EF       60 Gal = 0.57 EF       70 Gal = 0.55 EF       80 Gal = 0.53 EF         Electric:       30 Gal = 0.94 EF       40 Gal = 0.93 EF       50 Gal = 0.92 EF       60 Gal = 0.91 EF       70 Gal = 0.47 EF       80 Gal = 0.45 EF         Oil:       30 Gal = 0.55 EF       40 Gal = 0.53 EF       50 Gal = 0.51 EF       60 Gal = 0.49 EF       70 Gal = 0.47 EF       80 Gal = 0.45 EF         Programmable thermostat modeled.         All ducts and air handlers modeled.       All ducts and air handlers modeled within conditioned space.								
Window U-Value:       0.40 in CZs 1,2       0.30 in CZ 3       0.30 in CZ 4       0.27 in CZs 5,6,7,8         Window SHGC:       0.25 in CZs 1,2       0.25 in CZ 3       0.40 in CZ 4       Any in CZs 5,6,7,8         Door U-Value:       Opaque: 0.17       ≤½ lite: 0.25       >½ lite: 0.30         Door SHGC:       Opaque: Any       ≤½ lite: 0.25       >½ lite: 0.25 in CZs 1,2,3; 0.40 in CZs 4,5,6,7,8         Water Heater         •       DHW equipment modeled with the following efficiency levels as applicable:         Gas:       30 Gal = 0.63 EF       40 Gal = 0.61 EF       50 Gal = 0.59 EF       60 Gal = 0.57 EF       70 Gal = 0.55 EF       80 Gal = 0.53 EF         Gai:       30 Gal = 0.94 EF       40 Gal = 0.93 EF       50 Gal = 0.92 EF       60 Gal = 0.91 EF       70 Gal = 0.90 EF       80 Gal = 0.89 EF         Oil:       30 Gal = 0.55 EF       40 Gal = 0.53 EF       50 Gal = 0.51 EF       60 Gal = 0.49 EF       70 Gal = 0.47 EF       80 Gal = 0.45 EF         Programmable thermostat modeled.         All ducts and air handlers modeled within conditioned space.       Lighting & Appliances		4 ACH50 in CZs	s 1,2 3 ACH5	50 in CZs 3,4,5,6,7,8	]			
Window SHGC:       0.25 in CZs 1,2       0.25 in CZ 3       0.40 in CZ 4       Any in CZs 5,6,7,8         Door U-Value:       Opaque: 0.17       ≤½ lite: 0.25       >½ lite: 0.30         Door SHGC:       Opaque: Any       ≤½ lite: 0.25       >½ lite: 0.25 in CZs 1,2,3; 0.40 in CZs 4,5,6,7,8         Water Heater              • DHW equipment modeled with the following efficiency levels as applicable:       Gas:       30 Gal = 0.63 EF       40 Gal = 0.61 EF       50 Gal = 0.59 EF       60 Gal = 0.57 EF       70 Gal = 0.55 EF       80 Gal = 0.53 EF         Gas:       30 Gal = 0.94 EF       40 Gal = 0.93 EF       50 Gal = 0.92 EF       60 Gal = 0.91 EF       70 Gal = 0.90 EF       80 Gal = 0.89 EF         Oil:       30 Gal = 0.55 EF       40 Gal = 0.53 EF       50 Gal = 0.51 EF       60 Gal = 0.49 EF       70 Gal = 0.47 EF       80 Gal = 0.45 EF         Thermostat & Ductwork         Lighting & Appliances	ENERGY STAR windows	and doors modeled, as illustrated	below:		<b>_</b>			
Door U-Value:Opaque: $0.17$ $\leq \frac{1}{2}$ lite: $0.25$ $>\frac{1}{2}$ lite: $0.30$ Door SHGC:Opaque: Any $\leq \frac{1}{2}$ lite: $0.25$ $>\frac{1}{2}$ lite: $0.25$ in CZs 1,2,3; $0.40$ in CZs 4,5,6,7,8Water Heater•DHW equipment modeled with the following efficiency levels as applicable:Gas: $30$ Gal = $0.63$ EF $40$ Gal = $0.61$ EF $50$ Gal = $0.59$ EF $60$ Gal = $0.57$ EF $70$ Gal = $0.55$ EF $80$ Gal = $0.53$ EFElectric: $30$ Gal = $0.94$ EF $40$ Gal = $0.93$ EF $50$ Gal = $0.92$ EF $60$ Gal = $0.91$ EF $70$ Gal = $0.90$ EF $80$ Gal = $0.89$ EFOil: $30$ Gal = $0.55$ EF $40$ Gal = $0.53$ EF $50$ Gal = $0.51$ EF $60$ Gal = $0.49$ EF $70$ Gal = $0.47$ EF $80$ Gal = $0.45$ EFThermostat & DuctworkProgrammable thermostat modeled.All ducts and air handlers modeled within conditioned space.Lighting & Appliances								
Door SHGC:       Opaque: Any       ≤½ lite: 0.25       >½ lite: 0.25 in CZs 1,2,3; 0.40 in CZs 4,5,6,7,8         Water Heater       •       DHW equipment modeled with the following efficiency levels as applicable:         Gas:       30 Gal = 0.63 EF       40 Gal = 0.61 EF       50 Gal = 0.59 EF       60 Gal = 0.57 EF       70 Gal = 0.55 EF       80 Gal = 0.53 EF         Electric:       30 Gal = 0.94 EF       40 Gal = 0.93 EF       50 Gal = 0.92 EF       60 Gal = 0.91 EF       70 Gal = 0.90 EF       80 Gal = 0.89 EF         Oil:       30 Gal = 0.55 EF       40 Gal = 0.53 EF       50 Gal = 0.51 EF       60 Gal = 0.49 EF       70 Gal = 0.47 EF       80 Gal = 0.45 EF         Thermostat & Ductwork       •       •       Programmable thermostat modeled.       •       Itighting & Appliances	Window U-Value:	0.40 in CZs 1,2	0.30 in CZ 3	0.30 in CZ 4	0.27 in	CZs 5,6,7,8		
Door SHGC:       Opaque: Any       ≤½ lite: 0.25       >½ lite: 0.25 in CZs 1,2,3; 0.40 in CZs 4,5,6,7,8         Water Heater       •       DHW equipment modeled with the following efficiency levels as applicable:         Gas:       30 Gal = 0.63 EF       40 Gal = 0.61 EF       50 Gal = 0.59 EF       60 Gal = 0.57 EF       70 Gal = 0.55 EF       80 Gal = 0.53 EF         Electric:       30 Gal = 0.94 EF       40 Gal = 0.93 EF       50 Gal = 0.92 EF       60 Gal = 0.91 EF       70 Gal = 0.90 EF       80 Gal = 0.89 EF         Oil:       30 Gal = 0.55 EF       40 Gal = 0.53 EF       50 Gal = 0.51 EF       60 Gal = 0.49 EF       70 Gal = 0.47 EF       80 Gal = 0.45 EF         Thermostat & Ductwork       •       •       Programmable thermostat modeled.       •       Itighting & Appliances								
Water Heater         • DHW equipment modeled with the following efficiency levels as applicable:         Gas:       30 Gal = 0.63 EF       40 Gal = 0.61 EF       50 Gal = 0.59 EF       60 Gal = 0.57 EF       70 Gal = 0.55 EF       80 Gal = 0.53 EF         Electric:       30 Gal = 0.94 EF       40 Gal = 0.93 EF       50 Gal = 0.92 EF       60 Gal = 0.91 EF       70 Gal = 0.90 EF       80 Gal = 0.89 EF         Oil:       30 Gal = 0.55 EF       40 Gal = 0.53 EF       50 Gal = 0.51 EF       60 Gal = 0.49 EF       70 Gal = 0.47 EF       80 Gal = 0.45 EF    Thermostat & Ductwork    Programmable thermostat modeled. All ducts and air handlers modeled within conditioned space.	Window SHGC:	0.25 in CZs 1,2	0.25 in CZ 3	0.40 in CZ 4				
<ul> <li>DHW equipment modeled with the following efficiency levels as applicable:</li> <li>Gas: 30 Gal = 0.63 EF 40 Gal = 0.61 EF 50 Gal = 0.59 EF 60 Gal = 0.57 EF 70 Gal = 0.55 EF 80 Gal = 0.53 EF Electric: 30 Gal = 0.94 EF 40 Gal = 0.93 EF 50 Gal = 0.92 EF 60 Gal = 0.91 EF 70 Gal = 0.90 EF 80 Gal = 0.89 EF 0il: 30 Gal = 0.55 EF 40 Gal = 0.53 EF 50 Gal = 0.51 EF 60 Gal = 0.49 EF 70 Gal = 0.47 EF 80 Gal = 0.45 EF</li> <li>Thermostat &amp; Ductwork</li> <li>Programmable thermostat modeled.</li> <li>All ducts and air handlers modeled within conditioned space.</li> </ul>	Window SHGC: Door U-Value:	0.25 in CZs 1,2 Opaque: 0.17	0.25 in CZ 3 ≤½ lite: 0.25	0.40 in CZ 4	Any in	CZs 5,6,7,8		
Gas:       30 Gal = 0.63 EF       40 Gal = 0.61 EF       50 Gal = 0.59 EF       60 Gal = 0.57 EF       70 Gal = 0.55 EF       80 Gal = 0.53 EF         Electric:       30 Gal = 0.94 EF       40 Gal = 0.93 EF       50 Gal = 0.92 EF       60 Gal = 0.91 EF       70 Gal = 0.90 EF       80 Gal = 0.89 EF         Oil:       30 Gal = 0.55 EF       40 Gal = 0.53 EF       50 Gal = 0.51 EF       60 Gal = 0.49 EF       70 Gal = 0.47 EF       80 Gal = 0.45 EF         Thermostat & Ductwork       Frogrammable thermostat modeled.       All ducts and air handlers modeled within conditioned space.       Image: Conditioned space.       Image: Conditioned space.	Window SHGC: Door U-Value:	0.25 in CZs 1,2 Opaque: 0.17	0.25 in CZ 3 ≤½ lite: 0.25	0.40 in CZ 4	Any in	CZs 5,6,7,8		
Electric:       30 Gal = 0.94 EF       40 Gal = 0.93 EF       50 Gal = 0.92 EF       60 Gal = 0.91 EF       70 Gal = 0.90 EF       80 Gal = 0.89 EF         Oil:       30 Gal = 0.55 EF       40 Gal = 0.53 EF       50 Gal = 0.51 EF       60 Gal = 0.49 EF       70 Gal = 0.47 EF       80 Gal = 0.45 EF         Thermostat & Ductwork         Programmable thermostat modeled.       All ducts and air handlers modeled within conditioned space.         Lighting & Appliances	Window SHGC: Door U-Value: Door SHGC:	0.25 in CZs 1,2 Opaque: 0.17	0.25 in CZ 3 ≤½ lite: 0.25	0.40 in CZ 4	Any in	CZs 5,6,7,8		
Oil:       30 Gal = 0.55 EF       40 Gal = 0.53 EF       50 Gal = 0.51 EF       60 Gal = 0.49 EF       70 Gal = 0.47 EF       80 Gal = 0.45 EF         Thermostat & Ductwork         Programmable thermostat modeled.         All ducts and air handlers modeled within conditioned space.	Window SHGC: Door U-Value: Door SHGC: Vater Heater	0.25 in CZs 1,2 Opaque: 0.17 Opaque: Any	0.25 in CZ 3 ≤½ lite: 0.25 ≤½ lite: 0.25	0.40 in CZ 4	Any in	CZs 5,6,7,8		
Fhermostat & Ductwork         Programmable thermostat modeled.       All ducts and air handlers modeled within conditioned space.         Lighting & Appliances       Image: Constraint of the space of the	Window SHGC: Door U-Value: Door SHGC: Nater Heater DHW equipment modeled	0.25 in CZs 1,2 Opaque: 0.17 Opaque: Any d with the following efficiency level	0.25 in CZ 3 ≤½ lite: 0.25 ≤½ lite: 0.25 s as applicable:	0.40 in CZ 4	Any in 1,2,3; 0.40 in CZs 4,5	CZs 5,6,7,8		
<ul> <li>Programmable thermostat modeled.</li> <li>All ducts and air handlers modeled within conditioned space.</li> <li>Lighting &amp; Appliances</li> </ul>	Window SHGC:         Door U-Value:         Door SHGC:         Water Heater         DHW equipment modeled         Gas:       30 Ga	0.25 in CZs 1,2 Opaque: 0.17 Opaque: Any d with the following efficiency level al = 0.63 EF 40 Gal = 0.61 EF	0.25 in CZ 3 ≤½ lite: 0.25 ≤½ lite: 0.25 s as applicable: 50 Gal = 0.59 EF	0.40 in CZ 4	Any in 1,2,3; 0.40 in CZs 4,5 70 Gal = 0.55 EF	CZs 5,6,7,8 5,6,7,8 80 Gal = 0.53 I		
All ducts and air handlers modeled within conditioned space.	Window SHGC: Door U-Value: Door SHGC: Water Heater DHW equipment modeled Gas: 30 Ga Electric: 30 Ga	0.25 in CZs 1,2 Opaque: 0.17 Opaque: Any d with the following efficiency level al = 0.63 EF 40 Gal = 0.61 EF al = 0.94 EF 40 Gal = 0.93 EF	0.25 in CZ 3 ≤½ lite: 0.25 ≤½ lite: 0.25 s as applicable: 50 Gal = 0.59 EF 50 Gal = 0.92 EF	0.40 in CZ 4 >½ lite: 0.30 >½ lite: 0.25 in CZs 60 Gal = 0.57 EF 60 Gal = 0.91 EF	Any in 1,2,3; 0.40 in CZs 4,5 70 Gal = 0.55 EF 70 Gal = 0.90 EF	CZs 5,6,7,8 5,6,7,8 80 Gal = 0.53 I 80 Gal = 0.89 I		
	Window SHGC: Door U-Value: Door SHGC: Water Heater DHW equipment modeled Gas: 30 Ga Electric: 30 Ga Oil: 30 Ga	0.25 in CZs 1,2 Opaque: 0.17 Opaque: Any d with the following efficiency level al = 0.63 EF 40 Gal = 0.61 EF al = 0.94 EF 40 Gal = 0.93 EF	0.25 in CZ 3 ≤½ lite: 0.25 ≤½ lite: 0.25 s as applicable: 50 Gal = 0.59 EF 50 Gal = 0.92 EF	0.40 in CZ 4 >½ lite: 0.30 >½ lite: 0.25 in CZs 60 Gal = 0.57 EF 60 Gal = 0.91 EF	Any in 1,2,3; 0.40 in CZs 4,5 70 Gal = 0.55 EF 70 Gal = 0.90 EF	CZs 5,6,7,8 5,6,7,8 80 Gal = 0.53 I 80 Gal = 0.89 I		
	Window SHGC:         Door U-Value:         Door SHGC:         Water Heater         OHW equipment modeled         Gas:       30 Ga         Electric:       30 Ga         Oil:       30 Ga         Fhermostat & Ductwork         Programmable thermostat	0.25 in CZs 1,2 Opaque: 0.17 Opaque: Any d with the following efficiency level al = 0.63 EF 40 Gal = 0.61 EF al = 0.94 EF 40 Gal = 0.93 EF al = 0.55 EF 40 Gal = 0.53 EF t modeled.	0.25 in CZ 3 ≤½ lite: 0.25 ≤½ lite: 0.25 s as applicable: 50 Gal = 0.59 EF 50 Gal = 0.92 EF 50 Gal = 0.51 EF	0.40 in CZ 4 >½ lite: 0.30 >½ lite: 0.25 in CZs 60 Gal = 0.57 EF 60 Gal = 0.91 EF	Any in 1,2,3; 0.40 in CZs 4,5 70 Gal = 0.55 EF 70 Gal = 0.90 EF	CZs 5,6,7,8 5,6,7,8 80 Gal = 0.53 I 80 Gal = 0.89 I		
	Window SHGC:         Door U-Value:         Door SHGC:         Water Heater         • DHW equipment modeled         Gas:       30 Ga         Electric:       30 Ga         Oil:       30 Ga         Thermostat & Ductwork         • Programmable thermosta         • All ducts and air handlers	0.25 in CZs 1,2 Opaque: 0.17 Opaque: Any d with the following efficiency level al = 0.63 EF 40 Gal = 0.61 EF al = 0.94 EF 40 Gal = 0.93 EF al = 0.55 EF 40 Gal = 0.53 EF t modeled.	0.25 in CZ 3 ≤½ lite: 0.25 ≤½ lite: 0.25 s as applicable: 50 Gal = 0.59 EF 50 Gal = 0.92 EF 50 Gal = 0.51 EF	0.40 in CZ 4 >½ lite: 0.30 >½ lite: 0.25 in CZs 60 Gal = 0.57 EF 60 Gal = 0.91 EF	Any in 1,2,3; 0.40 in CZs 4,5 70 Gal = 0.55 EF 70 Gal = 0.90 EF	CZs 5,6,7,8 5,6,7,8 80 Gal = 0.53 I 80 Gal = 0.89 I		



Two paths are provided for satisfying the mandatory requirements for all certified homes, Exhibit 2. Path A - HVAC Grading utilizes ANSI / RESNET / ACCA Std. 310<sup>13</sup>, a standard for grading the installation of HVAC systems. Path B - HVAC Credential utilizes an HVAC contractor credentialed by an EPA-recognized H-QUITO. Either path may be selected, but all requirements within that path must be satisfied for the home to be certified.

### **Exhibit 2: Mandatory Requirements for All Certified Homes**

Party Responsible	Mandatory Requirements				
Requirements Applicable to Path A & B					
Rater	Completion of National Rater Design Review Checklist, Version 3 / 3.1     Completion of National Rater Field Checklist, Version 3 / 3.1				
<u>Builder</u>	Completion of National Water Management System Builder Requirements, Version 3 / 3.1				
Requirements Only Applicable to I	Path A - HVAC Grading <sup>13</sup>				
HVAC System Designer	<u>Completion of an HVAC design report compliant with ANSI / RESNET / ACCA Std. 310, plus</u> <u>the ENERGY STAR Supplement.</u>				
HVAC Installing Contractor	None. While the HVAC contractor plays a critical role in properly installing and commissioning <u>a system, the Rater is the party responsible for assessing its installation quality in accordance     with ANSI / RESNET / ACCA Std. 310. </u>				
Requirements Only Applicable to I	Path B - HVAC Credential				
HVAC System Designer	Completion of National HVAC Design Report, Version 3 / 3.1				
HVAC Installing Contractor	Completion of National HVAC Commissioning Checklist, Version 3 / 3.1				
Party Responsible	Mandatory Requirements				
Rater	<ul> <li>Completion of National Rater Design Review Checklist</li> <li>Completion of National Rater Field Checklist</li> </ul>				
HVAC System Designer	Completion of National HVAC Design Report				
HVAC Installing Contractor	Completion of National HVAC Commissioning Checklist				
Builder	Completion of National Water Management System Builder Requirements				



To determine the program Version and Revision that a home is required to be certified under, look up the location and permit date of the home in Exhibit 3. Note that the National Version 3 program requirements are being implemented in states that have not adopted the 2012, 2015, or 2018 IECC, or an equivalent code. Note, as well, that regional program requirements, and associated implementation timelines, have been developed for homes in CA, FL, GU, HI, the Northern Mariana Islands, OR, PR, and WA. The National Version 3 and regional program requirements can be found at <a href="https://www.energystar.gov/newhomesrequirements">www.energystar.gov/newhomesrequirements</a>.

This Exhibit contains all implementation timelines applicable on or after September 1, 2016. Implementation timelines applicable prior to this date can be obtained by contacting <u>energystarhomes@energystar.gov</u>.

State / Territory	Homes Permitted <sup>4414</sup> On or After This Date Must Meet the Adjacent Version & Revision	Version	Revision 4514
AL, AK, AZ, AR, CO, GA, IN, ID,	07-01-2016	National v3	Rev. 08
KS, KY, LA, ME, MS, MO, NE, NH, NM, NC, ND, OH, OK, PA, SC,	01-01-2019	National v3	Rev. 09
SD, TN, UT, VA, WV, WI, WY	<u>10-01-2020</u>	National v3	<u>Rev. 10</u>
DC, DE, IA, IL, MA, MD, MN, MT,	07-01-2016	National v3.1	Rev. 08
RI, VT	01-01-2019	National v3.1	Rev. 09
	<u>10-01-2020</u>	National v3.1	<u>Rev. 10</u>
NV	07-01-2016	National v3	Rev. 08
	10-01-2016	National v3.1	Rev. 08
	01-01-2019	National v3.1	Rev. 09
	<u>10-01-2020</u>	National v3.1	<u>Rev. 10</u>
MI, NJ	07-01-2016	National v3	Rev. 08
	04-01-2017	National v3.1	Rev. 08
	01-01-2019	National v3.1	Rev. 09
	<u>10-01-2020</u>	National v3.1	<u>Rev. 10</u>
CT, NY	07-01-2016	National v3	Rev. 08
	10-01-2017	National v3.1	Rev. 08
	01-01-2019	National v3.1	Rev. 09
	<u>10-01-2020</u>	National v3.1	<u>Rev. 10</u>
ТХ	07-01-2016	National v3	Rev. 08
	07-01-2018	National v3.1	Rev. 08
	01-01-2019	National v3.1	Rev. 09
	<u>10-01-2020</u>	National v3.1	<u>Rev. 10</u>
WA	07-01-2016	National v3.1	Rev. 08
	07-01-2018	Oregon and Washington v3.2	Rev. 08
	01-01-2019	Oregon and Washington v3.2	Rev. 09
	<u>10-01-2020</u>	Oregon and Washington v3.2	<u>Rev. 10</u>
OR	07-01-2016	National v3.1	Rev. 08
	01-01-2019	National v3.1	Rev. 09
	04-01-2019	Oregon and Washington v3.2	Rev. 09
	<u>10-01-2020</u>	Oregon and Washington v3.2	<u>Rev. 10</u>

### Exhibit 3: ENERGY STAR Certified Homes Implementation Timeline

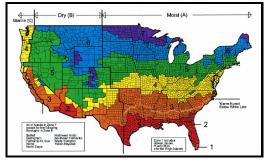
#### Footnotes:

- 1. A modular home is a prefabricated home that is made of multiple modules or sections that are manufactured and substantially assembled in a manufacturing plant. These pre-built sections are transported to the building site and constructed by a builder to meet all applicable building codes for site-built homes.
- 2. A dwelling unit, as defined by the 2012 IECC, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation.



- 3. Any above-grade story with 20% or more occupiable space, including commercial space, shall be counted towards the total number of stories for the purpose of determining eligibility to participate in the program. The definition of an 'above-grade story' is one for which more than half of the gross surface area of the exterior walls is above-grade. All below-grade stories, regardless of type, shall not be included when evaluating eligibility.
- 4. Per ASHRAE 62.2-2010, occupiable space is any enclosed space inside the pressure boundary and intended for human activities or continual human occupancy, including, but not limited to, areas used for living, sleeping, dining, and cooking, toilets, closets, halls, storage and utility areas, and laundry areas.
- 5. These units may earn the ENERGY STAR through either the Certified Homes Program, or the Multifamily High Rise (MFHR) or <u>Multifamily New Construction (MFNC)</u> Programs. If participating in the Certified Homes program and the dwelling unit is served by a central heating, cooling, or hot water system, use of the RESNET Guidelines for Multifamily Ratings<u>ANSI / RESNET / ICC Standard</u> <u>301-2019 for modeling the specified central system(s) is recommended.</u>
- 6. While certification will result in compliance with many code requirements, a Rater is not responsible for ensuring that all code requirements have been met prior to certification. For more information about how these program requirements help satisfy code requirements, visit: www.energystar.gov/newhomesguidance. In the event that a code requirement, a manufacturer's installation instructions, or an engineering document conflicts with a requirement of the ENERGY STAR program (e.g., slab insulation is prohibited to allow visual access for termite inspections), then the conflicting requirement within these program requirements shall not be met. Certification shall only be allowed if the Rater has determined that no equivalent option is available that could meet the intent of the conflicting requirement (e.g., switching from exterior to interior slab edge insulation). Note that a home must still meet its ENERGY STAR ERI Target. Therefore, other efficiency measures may be needed to compensate for the omission of the conflicting requirement.
- 6.—<u>The term 'Provider' refers to an Approved Rating Provider that is a designee of a VOO such as RESNET. If permitted prior to July 1, 2012, units in multifamily buildings with 4 or 5 stories above-grade may earn the ENERGY STAR through either the Certified Homes Program or the Multifamily High Rise (MFHR) Program, without assessing whether the 80% threshold has been met.</u>
- 7. Where requirements of the local codes, manufacturers' installation instructions, engineering documents, or regional ENERGY STAR programs overlap with the requirements of these guidelines, EPA offers the following guidance:
- 8. Where the overlapping requirements exceed the ENERGY STAR guidelines, these overlapping requirements shall be met;
- 9.7. Where overlapping requirements conflict with a requirement of the ENERGY STAR program (e.g., slab insulation is prohibited to allow visual access for termite inspections), then the conflicting requirement within these program requirements shall not be met. Certification shall only be allowed if the Rater has determined that no equivalent option is available that could meet the intent of the conflicting requirement (e.g., switching from exterior to interior slab edge insulation). Note that a home must still meet its ENERGY STAR ERI Target. Therefore, other efficiency measures may be needed to compensate for the omission of the conflicting requirement.
- 10. Prior to Rev. 06, homes were permitted to be certified using either a Prescriptive Path or a Performance Path. Homes with a permit date on or after 09/01/2015 shall only use the Performance Path, which has been renamed the ENERGY STAR Certification Process. To minimize disruption to projects that are in process, homes with a permit date before 09/01/2015 are permitted to use a modified version of the Prescriptive Path in lieu of the Performance Path. For more information about this compliance option, visit: www.energystar.gov/v31prescriptivepath.
- 8. The term 'Rater' refers to the person(s) completing the third-party verification required for certification. The person(s) shall: a) be a Certified Rater, Approved Inspector, or an equivalent designation as determined by a VOO such as RESNET; and, b) have attended and successfully completed an EPA-recognized training class. See www.energystar.gov/newhomestraining.
- 11.9. The software program shall automatically determine (i.e., without relying on a user-configured ENERGY STAR Reference Design) this target for each rated home by following the National ERI Target Procedure, Version 3.1 (Rev. <u>10</u>09), available <u>at www.energystar.gov/newhomesrequirementson EPA's website</u>.
- 12. The term 'Rater' refers to the person completing the third party inspections required for certification. This person shall: a) be a certified Home Energy<u>Certified</u> Rater, Rating Field<u>Approved</u> Inspector, or an equivalent designation as determined by a VOO, such as RESNET; and, b) have attended and successfully completed an EPA-recognized training class. See www.energystar.gov/newhomestraining.
- 13.10. Raters who operate under a Sampling Provider are permitted to verify the Minimum Rated Features of the home and to verify any Checklist Item designated "Rater Verified" using the VOO-approved sampling protocol for homes outside California, and the CEC-approved sampling protocol for homes in CA. No parties other than Raters are permitted to use sampling. All other items shall be verified for each certified home. For example, no items on the National HVAC Commissioning Checklist are permitted to be verified using a sampling protocol.
- 14.<u>11.</u> Note that the efficiency levels of ENERGY STAR certified products aligned with these product specifications when this Version was first released. These efficiency features form the basis of the ENERGY STAR ERI target, regardless of any subsequent revisions to ENERGY STAR certified product specifications. EPA recommends, but does not require, that current ENERGY STAR products be included in ENERGY STAR homes. For current ENERGY STAR products, visit <u>www.energystar.gov/products</u>.
- **15.12.** The following map illustrates the Climate Zone boundaries as defined by the 2012 IECC Figure R301.1.





13. Path A – HVAC Grading shall not be used until an Effective Date has been defined by RESNET for ANSI / RESNET / ACCA Std. 310. Path A – HVAC Grading shall then use ANSI / RESNET / ACCA Std. 310 including all Addenda and Normative Appendices, with new versions and Addenda implemented according to the Effective Date and Transition Period End Date defined by RESNET. RESNET interpretations of Standard 310 shall also be followed.

16. The version of ANSI / RESNET / ICC Std. 301 utilized by RESNET for HERS ratings is used to model this parameter.

- 17.14. The Rater may define the 'permit date' as either the date that the permit was issued or the date of the contract on the home. In cases where permit or contract dates are not available, Providers have discretion to estimate permit dates based on other construction schedule factors. These assumptions should be both defensible and documented.
- 18:15. Homes certified under Rev. 09-10 of the program requirements are permitted to use either Rev. 08, or 09, or 10 of the National HVAC Design Report.