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80 College Street
Suite H
Christiansburg VA 24073
540.381.4290
www.balzer.cc

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Envisioning Tomorrow, Designing Today

December 28, 2021

Kali Casper
Town of Blacksburg
400 South Main Street
Blacksburg, VA 24073

RE: Rugby Field Townhomes CUP - Revisions

Dear Kali,

Included in this letter are items our team has addressed on the above referenced project since our receiving the Staff report and our Planning Commission Work Session Meeting on December 16, 2021. Below is a list of these items and how each has been addressed.

Revisions included are:

1) Additional landscaping has been shown to ensure screening of parking areas.
2) Building height maximums have been reviewed for Building 15, Unit 406 in Building 4 and Unit 2004 in Building 20. Building 15 and 4 are the two-story units and will have a max height of 31'-2". Even if the buildings were set at Country Club road grade, these units would only be at an elevation of 2181. As they will be set down below road grade, they will be much lower than the 2184 maximum elevation. Building 20 has a max height of 46'-5 ¾". Based on the anticipated finished floor elevation of Unit 2004 being set at 2135, the final maximum elevation would be under 2182.
3) The eleven parking spaces shown as future and asked to be included as an Alternative Transportation Plan have been revised to show them being installed with the project. No Alternative Transportation plan is requested now. This area has also been removed from the open space calculation since it will be paved with the onset of the project.
4) Locations for Trash and Recycling containers have been shown in the garages of the various unit types in an exhibit attached to this letter. Multiple locations are possible and are indicated as a box with a T/R label on units 1201, 1401, and 1806 on the attached exhibit and sized as a 96-gallon container. Collection for units 101, 501 and 502 will be dependent on the truck and company contracted to remove trash. Areas in front of their respective driveways may be adequate or a specified nearby location will be designated at the site plan stage.
5) Drive Aisle Direction:
    a. Alley access to garages for Buildings 9 & 10 and 11& 12 are 20' wide and have been designated as one way.
    b. The 2 internal parking areas with 24 spaces each have been adjusted to a 20' drive aisle and designated as one way.

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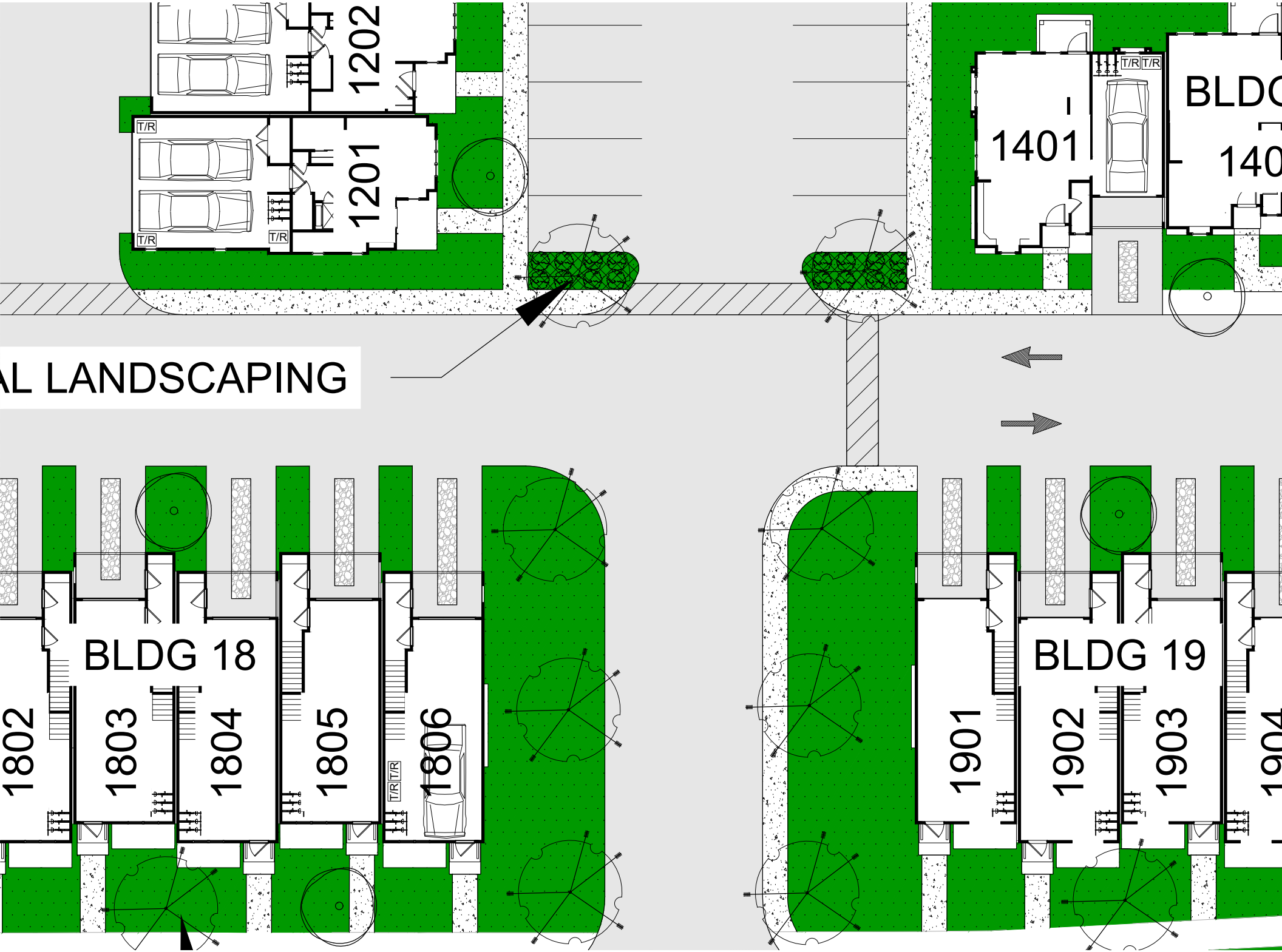
6) Sidewalks have been added between Buildings 2 and 3 to connect to the bike rack.
7) Additional sidewalks have been added throughout the project to provide connectivity to the fronts of all units as required by the use and design standards. This revision removes the previously requested exception to this requirement.
8) Applicant will be constructing the proposed townhomes to an Energy Star Rating as designated by the Review Checklist attached to this letter.
9) Project signage will meet with signage ordinance for General Commercial Zoning districts. As the property has over 150 feet of road frontage, the maximum sign facacde size is 40 square feet with a maximum height of 8'. See attached sign exhibit for two options showing a proposed rendering and size.
10) Buffer Vegetation – Sheet CUP 3 is showing proposed landscaping that meets the Type C buffer Requirements. Until final grading plans are complete for the trail relocation, the amount of existing vegetation that may be able to remain is unknown. Should existing vegetation remain, the applicant would use those trees or shrubs as buffer plantings if they meet the intent and types as required in the Town Zoning ordinance.
11) Perimeter Fencing – We are awaiting some additional information from MCPS on their preference concerning the existing chain link fence that runs along the common property line. However, the requirement and location is dictated within the original rezoning and that intent will not change with this CUP.

Thank you for reviewing this supplemental information and if you have any additional questions or comments, please feel free to contact me.

Sincerely,
BALZER AND ASSOCIATES, INC.

Steven M. Semones
Executive Vice President

Envisioning Tomorrow, Designing Today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OMB Control Number: 2060-0586
Expiration Date: 01-31-2024
EPA Form Number: 5900-429

ENERGY STAR Single-Family New Homes
National Rater Design Review Checklist, Version 3 / 3.1 (Rev. 11)

If pursuing Track A - HVAC Grading, complete this page. [1]

Home Address: _____ City: _____ State: _____ Permit Date: _____

	Must Correct	Rater [2] Verified
1. Partnership Status		
1.1 Rater has verified and documented that builder has an ENERGY STAR partnership agreement using energystar.gov/partnerlocator. [3]	☐	☐
2. High-Performance Fenestration		
2.1 Specified fenestration meets or exceeds 2009 IECC requirements. [4]	☐	☐
3. High-Performance Insulation		
3.1 Specified ceiling, wall, floor, and slab insulation levels comply with one of the following options:		
3.1.1 Meets or exceeds 2009 IECC levels [5, 6, 7] **OR**;	☐	☐
3.1.2 Achieves ≤ 133% of the total UA resulting from the U-factors in 2009 IECC Table 402.1.3, per guidance in Footnote 5d, AND specified home infiltration does not exceed the following: [6, 7] 3 ACH50 in CZs 1, 2 2.5 ACH50 in CZs 3, 4 2 ACH50 in CZs 5, 6, 7 1.5 ACH50 in CZ 8	☐	☐
4a. Review of ANSI / RESNET / ACCA Std. 310 HVAC Design Report with ENERGY STAR Supplement		
4a.1 HVAC design report compliant with ANSI / RESNET / ACCA Std. 310, with the ENERGY STAR supplement, collected for records, with no Items left blank.	☐	☐
4a.2 ANSI / RESNET / ACCA Std. 310 Rater Design Review Checklist completed for applicable housing type, with all items marked, “Rater Verified”.	☐	☐
4a.3 Cooling sizing % is within the cooling sizing limit selected by the HVAC designer.	☐	☐

Rater Name: _____ Date of Review: _____

Rater Signature: _____ Rater Company Name:_____

OMB Control Number: 2060-0586
Expiration Date: 01-31-2024
EPA Form Number: 5900-429

ENERGY STAR Single-Family New Homes
National Rater Design Review Checklist, Version 3 / 3.1 (Rev. 11)

If pursuing Track B - HVAC Credential, complete this page.

Home Address: _____ City: _____ State: _____ Permit Date: _____

1. Partnership Status	**Must Correct**	**Rater [2] Verified**
1.1 Rater has verified and documented that builder has an ENERGY STAR partnership agreement using energystar.gov/partnerlocator. [3]	☐	☐
1.2 Rater has verified and documented [8] that HVAC contractor holds credential required to complete National HVAC Commissioning Checklist, unless all equipment to be installed in home to be certified is an exempted type, in which case check "N/A". [9] ☐ N/A HVAC Contractor Company Name: _____	☐	☐
2. High-Performance Fenestration		
2.1 Specified fenestration meets or exceeds 2009 IECC requirements. [4]	☐	☐
3. High-Performance Insulation		
3.1 Specified ceiling, wall, floor, and slab insulation levels comply with one of the following options:		
3.1.1 Meets or exceeds 2009 IECC levels [5,6,7] **OR**;	☐	☐
3.1.2 Achieves ≤ 133% of the total UA resulting from the U-factors in 2009 IECC Table 402.1.3, per guidance in Footnote 5d, AND specified home infiltration does not exceed the following: [6,7] 3 ACH50 in CZs 1, 2 2.5 ACH50 in CZs 3, 4 2 ACH50 in CZs 5, 6, 7 1.5 ACH50 in CZ 8	☐	☐
4b. Review of ENERGY STAR National HVAC Design Report [10]		
4b.1 National HVAC Design Report collected for records, with no Items left blank.	☐	☐
4b.2 National HVAC Design Report reviewed by Rater for the following parameters (National HVAC Design Report Item # in parenthesis):		
4b.2.1 Cooling season and heating season outdoor design temperatures used in loads (3.3) are within the limits defined for the State and County, or US Territory, where the home will be built, or the designer has provided an allowance from EPA to use alternative values. All limits are published at energystar.gov/hvacdesigntemps. Note that revised (i.e., 2019 Edition) limits are required to be used for all HVAC Design Reports generated after 10/01/2020. [11]	☐	☐
4b.2.2 Number of occupants used in loads (3.4) is within ± 2 of the home to be certified. [12]	☐	☐
4b.2.3 Conditioned floor area used in loads (3.5) is between 100 sq. ft. smaller and 300 sq. ft. larger than the home to be certified. [13]	☐	☐
4b.2.4 Window area used in loads (3.6) is between 15 sq. ft. smaller and 60 sq. ft. larger than the home to be certified, or, for homes to be certified with > 500 sq. ft. of window area, between 3% smaller and 12% larger. [14]	☐	☐
4b.2.5 Predominant window SHGC used in loads (3.7) is within 0.1 of predominant value in the home to be certified. [15]	☐	☐
4b.2.6 Sensible, latent, & total heat gain are documented (3.10 - 3.12) for the orientation of the home to be certified. [16]	☐	☐
4b.2.7 The variation in total heat gain across orientations (3.13) is ≤ 6 kBtuh. [16]	☐	☐
4b.2.8 Cooling sizing % (4.13) is within the cooling sizing limit (4.15) selected by the HVAC designer.	☐	☐

Rater Name: _____ Date of Review: _____

Rater Signature: _____ Rater Company Name:_____

ENERGY STAR Single-Family New Homes National Rater Design Review Checklist, Version 3 / 3.1 (Rev. 11)

Footnotes

1. Track A – HVAC Grading shall not be used until an implementation schedule has been defined for ANSI / RESNET / ACCA Std. 310 by the Home Certification Organization (HCO) that the home is being certified under. Track 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 schedule defined by the HCO that the home is being certified under.
2. 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 or Approved Inspector, as defined by ANSI / RESNET / ICC Standard 301, or an equivalent designation as determined by an HCO; and, b) have attended and successfully completed an EPA-recognized training class. See www.energystar.gov/newhomestraining.
3. Raters are only required to document the partnership status of a builder once, for the first home that the Rater certifies for them.
4. All windows, doors and skylights shall meet or exceed the component U-factor and SHGC requirements specified in 2009 IECC Table 402.1.1. If no NFRC rating is noted on the window or in product literature (e.g., for site-built fenestration), select the U-factor and SHGC value from Tables 4 and 10, respectively, in 2013 ASHRAE Fundamentals, Chapter 15. Select the highest U-factor and SHGC value among the values listed for the known window characteristics (e.g., frame type, number of panes, glass color, and presence of low-e coating). Note that the U-factor requirement applies to all fenestration while the SHGC only applies to the glazed portion. The following exceptions apply:
   a. An area-weighted average of fenestration products shall be permitted to satisfy the U-factor requirements;
   b. An area-weighted average of fenestration products ≥ 50% glazed shall be permitted to satisfy the SHGC requirements;
   c. 15 square feet of glazed fenestration per dwelling unit shall be exempt from the U-factor and SHGC requirements, and shall be excluded from area-weighted averages calculated using a) and b), above;
   d. One side-hinged opaque door assembly up to 24 square feet in area shall be exempt from the U-factor requirements and shall be excluded from area-weighted averages calculated using a) and b), above;
   e. Fenestration utilized as part of a passive solar design shall be exempt from the U-factor and SHGC requirements, and shall be excluded from area-weighted averages calculated using a) and b), above. Exempt windows shall be facing within 45 degrees of true South and directly coupled to thermal storage mass that has a heat capacity > 20 btu / ft^3x°F and provided in a ratio of at least 3 sq. ft. per sq. ft. of South facing fenestration. Generally, thermal mass materials will be at least 2 in. thick.

   In PHIUS+ or PHI certified homes, where triple-glazed window assemblies with thermal breaks / spacers between the panes are used, such windows meet the intent of Item 2.1 and shall be excluded when assessing compliance of a) through e), above.
5. Specified levels shall meet or exceed the component insulation levels in 2009 IECC Table 402.1.1. The following exceptions apply:
   a. Steel-frame ceilings, walls, and floors shall meet the insulation levels of 2009 IECC Table 402.2.5. In CZ 1 and 2, the continuous insulation requirements in this table shall be permitted to be reduced to R-3 for steel-frame wall assemblies with studs spaced at 24 in. on center. This exception shall not apply if the alternative calculations in d) are used;
   b. For ceilings with attic spaces, R-30 shall satisfy the requirement for R-38 and R-38 shall satisfy the requirement for R-49 wherever the full height of uncompressed insulation at the lower R-value extends over the wall top plate at the eaves. This exemption shall not apply if the alternative calculations in d) are used;
   c. For ceilings without attic spaces, R-30 shall satisfy the requirement for any required value above R-30 if the design of the roof / ceiling assembly does not provide sufficient space for the required insulation value. This exemption shall be limited to 500 sq. ft. or 20% of the total insulated ceiling area, whichever is less. This exemption shall not apply if the alternative calculations in d) are used;
   d. An alternative equivalent U-factor or total UA calculation may also be used to demonstrate compliance, as follows:

      An assembly with a U-factor equal or less than specified in 2009 IECC Table 402.1.3 complies.

      A total building thermal envelope UA that is less than or equal to the total UA resulting from the U-factors in Table 402.1.3 also complies. The performance of all components (i.e., ceilings, walls, floors, slabs, and fenestration) can be traded off using the UA approach. Note that Items 3.1 through 3.3 of the National Rater Field Checklist shall be met regardless of the UA tradeoffs calculated. The UA calculation shall be done using a method consistent with the ASHRAE Handbook of Fundamentals and shall include the thermal bridging effects of framing materials. The calculation for a steel-frame envelope assembly shall use the ASHRAE zone method or a method providing equivalent results, and not a series-parallel path calculation method.
6. Consistent with the 2009 IECC, slab edge insulation is only required for slab-on-grade floors with a floor surface less than 12 inches below grade. Slab insulation shall extend to the top of the slab to provide a complete thermal break. If the top edge of the insulation is installed between the exterior wall and the edge of the interior slab, it shall be permitted to be cut at a 45-degree angle away from the exterior wall. Alternatively, the thermal break is permitted to be created using ≥ R-3 rigid insulation on top of an existing slab (e.g., in a home undergoing a gut rehabilitation). In such cases, up to 10% of the slab surface is permitted to not be insulated (e.g., for sleepers, for sill plates). Insulation installed on top of slab shall be covered by a durable floor surface (e.g., hardwood, tile, carpet).
7. Where an insulated wall separates a garage, patio, porch, or other unconditioned space from the conditioned space of the house, slab insulation shall also be installed at this interface to provide a thermal break between the conditioned and unconditioned slab. Where specific details cannot meet this requirement, partners shall provide the detail to EPA to request an exemption prior to the home's certification. EPA will compile exempted details and work with industry to develop feasible details for use in future revisions to the program. A list of currently exempted details is available at: energystar.gov/slabedge.
8. Raters' documentation of the HVAC contractor credential must be updated at least once every 12 months.
9. HVAC contractors must be credentialed by an EPA-recognized HVAC Quality Installation Training and Oversight Organization (H-QUITO) if a split air conditioner, unitary air conditioner, air-source heat pump, or water-source (i.e., geothermal) heat pump up to 65 kBtuh with a forced-air distribution system (i.e., ducts) or a furnace up to 225 kBtuh with a forced-air distribution system (i.e., ducts) will be installed in the home to be certified. For all other permutations of equipment (e.g., boilers, mini-split / multi-split systems) and distribution systems, a credential is not required. An explanation of this credentialing process and links to H-QUITOs, which maintain lists of credentialed contractors, can be found at energystar.gov/newhomeshvac.

ENERGY STAR Single-Family New Homes
National Rater Design Review Checklist, Version 3 / 3.1 (Rev. 11)

10. The Rater shall collect one National HVAC Design Report per system design per plan. Regardless of whether the "site-specific design" or "group design" box has been checked in Item 1.6 of the National HVAC Design Report, the system design as documented on the National HVAC Design Report must fall within the tolerances in Item 4b.2 for the home to be certified. The report is only required to be collected once per system design, even if multiple homes are built using this design (e.g., in a production environment where the same plan is built multiple times, only one report is required as long as no aspect of the system design changes between homes). The Rater is only responsible for verifying that the designer has not left any items blank on the National HVAC Design Report and for verifying the discrete objective parameters in Item 4b.2 of this Checklist, not for verifying the accuracy of every input on the National HVAC Design Report.
11. Visit energystar.gov/hvacdesigntemps for the maximum cooling season design temperature and minimum heating season design temperature permitted for ENERGY STAR Single-Family New Homes and the process for a designer to obtain an allowance from EPA. The same design report is permitted to be used in other counties, as long as the design temperature limits in those other counties meet or exceed the cooling and heating season temperature limits for the county selected. For example, if Frederick County, VA, is used for the load calculations, with a 1% cooling temperature limit of 93 °F, then the same report could be used in Fairfax County (which has a higher limit of 94 °F) but not in Albemarle County (which has a lower limit of 92 °F).
12. To determine the number of occupants among all HVAC systems in the home, calculate the number of bedrooms, as defined below, and add one. The number of occupants used in loads must be within ± 2 of the home to be certified, unless Item 1.5 of the National HVAC Design Report indicates that the system is a cooling system for temporary occupant loads.

    A bedroom is defined by ANSI / RESNET / ICC Standard 301-2014 as a room or space 70 sq. ft. or greater size, with egress window and closet, used or intended to be used for sleeping. A "den", "library", or "home office" with a closet, egress window, and 70 sq. ft. or greater size or other similar rooms shall count as a bedroom, but living rooms and foyers shall not.

    An egress window, as defined in 2009 IRC section R310, shall refer to any operable window that provides for a means of escape and access for rescue in the event of an emergency. The egress window definition has been summarized for convenience. The egress window shall:

    - have a sill height of not more than 44 inches above the floor; AND
    - have a minimum net clear opening of 5.7 sq. ft.; AND
    - have a minimum net clear opening height of 24 in.; AND
    - have a minimum net clear opening width of 20 in.; AND
    - be operational from the inside of the room without the use of keys, tools or special knowledge.
13. Conditioned Floor Area for the home to be certified shall be calculated in accordance with the definition in ANSI / RESNET / ICC Standard 301-2019.
14. Window area for the home to be certified shall be calculated in accordance with the on-site inspection protocol provided in Normative Appendix B of ANSI / RESNET / ICC Standard 301-2019.
15. "Predominant" is defined as the SHGC value used in the greatest amount of window area in the home.
16. Orientation represents the direction that the front door of the house is facing. The designer is only required to document the loads for the orientation(s) that the house might be built in. For example, if a house plan will only be built one time in a specific orientation (e.g., a site-specific design), then the designer only needs to document the loads for this one orientation.