Construction and Design Standards for Stroubles Ridge

The following are construction and design guidelines that apply to the houses constructed in Phase 1 of the Stroubles Ridge development. These guidelines are in place to ensure the durability, energy efficiency, and affordability of these homes, as well as specific funding requirements.

Site

- Buried gutter drainpipes shall be of smooth, rigid material. Flexible corrugated black pipe shall not be permitted to be connected to gutters.

Structure

- Any non-treated lumber (Ex. Framing) shall be a minimum of 12" above finished grade.
 Allowances may be made for accessible / ADA-compliant buildings.
- Crawlspace or basement foundations are to be fully insulated to current code and conditioned.
 Vented crawlspaces shall not be permitted.

Building Envelope

- Air leakage: Maximum of 2.25 ACH 50.
- R-Value Walls: All houses to have minimum insulation values prescribed by the 2021 IRC
- R-Value Ceiling/Roof: Per 2021 IRC, or better. Allow for full height insulation above top plate in vented attic assemblies. R-50 minimum for air permeable attic insulation (batt or loose fill)
 Unvented attic assemblies also allowed, minimum of R-38 spray foam on roof deck per code.
- Foundation walls: R-10 continuous insulation minimum.
- Wall sheathing to be Huber Zip System, or equivalent.

Building Shell and Cladding

- Exterior finish materials are to be durable, solid, and repairable. Examples of acceptable
 materials are: fiber cement (ex; James Hardie) Engineered wood (ex; LP Smartside), solid wood,
 fly ash (ex; Boral Tru Exterior) masonry finishes such as CMU coated in stucco or paint, brick,
 stone, or other masonry finishes. Some metal claddings may also be acceptable.
- Vinyl siding shall not be permitted.

HVAC

- Homes to be fully electric, space heating, and hot water to be electric. Natural gas/propane/combustion appliances shall not be permitted.
- HVAC systems to be designed by a qualified professional. Manual J, D, and S reports shall be provided by CHP to all relevant sub-contractors.

- HVAC equipment and ductwork in unconditioned spaces (spaces outside the air barrier) shall not be permitted.
- Range hoods shall be installed and vented to the outdoors. Alternatively, range venting can be accomplished through the ERV system.
- Each house shall have an Energy Recovery Ventilator and whole house dehumidification system. Specs and design for HVAC systems to be provided by CHP to all relevant sub-contractors.

Plumbing and Electrical

- For a house on a crawlspace, a whole-house plumbing shut off shall be located in an accessible location on the main floor, typically the laundry or utility room. For a house on a basement, the main shut off may be located in the basement.
- Provisions are to be made to prep for future installation of solar PV panels and an EV charger, for the home to be "Solar and EV ready".
- A dedicated electrical outlet is to be installed to serve a dehumidifier, and an additional dedicated circuit shall be installed for sump pump rough in.
- The main panel box shall be located on an interior wall, or in the basement. Panel boxes shall not be recessed into exterior walls.

HERS rating

- HERS rating of 55 or better (or equivalent comparable ERI target)

Notes

- The Stroubles Ridge project site is in Climate zone 4A.
- A minimum of the first 9 houses constructed in Stroubles Ridge shall conform to the VA State Housing Innovations in Energy Efficiency (HIEE) program. Certification under the Department of Energy Zero Energy Ready Homes (ZERH) is a requirement. Please review the "U.S. DOE Zero Energy Ready Home Single Family Homes National Program Requirements Version 2 (Rev. 2)" document. Additionally the first 9 houses will also meet EPA WaterSense and Indoor AirPlus program requirements.