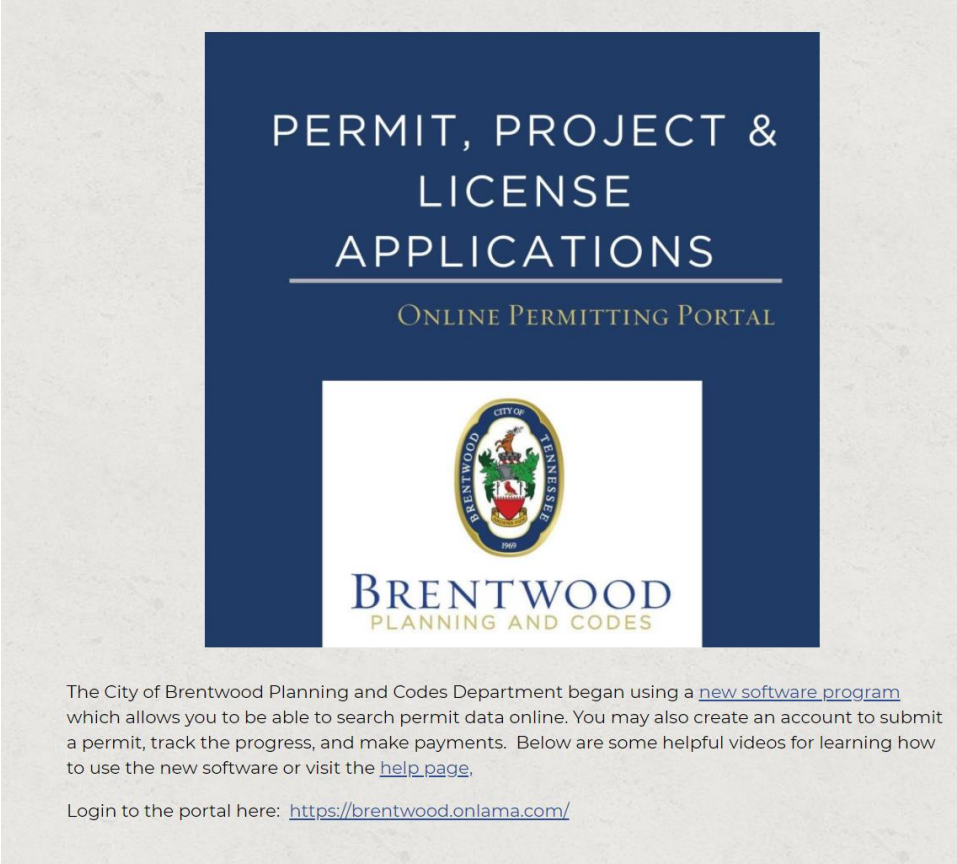
Residential Plan Review Checklist:
♦ New Single Family Home Construction ♦

Plans have been reviewed for compliance to the City of Brentwood Code of Ordinances, the 2018 International Residential Code (IRC), 2012 International Energy Conservation Code (IECC) with amendments, 2017 National Electrical Code (NEC NFPA 70) and Special Guidelines for Electrical Installation.

Plan review comments may not be an all-inclusive list. It is the responsibility of the owner, design team and contractor to construct all projects in accordance with the adopted code references listed above.

For plan submittal go to: https://www.brentwoodtn.gov/departments/planning-codes



1) PROCEDURES

Engineering Department: If the parcel/property is transitional, over 15% slope, improvements will require review and approval by the Engineering Department prior to release of permit(s). Transitional lots require a Tennessee Professional Engineer or Architect to design. Documentation to be stamped and signed by the design professional in accordance with the Tennessee Board of Architecture and Land Engineering Examiners: www.tn.gov/commerce/boards/aece.aeboard@tn.gov. Contact the Engineering Department for guidance (615) 371-0080

For ALL land disturbance projects a signed Erosion Prevention and Sediment Control Checklist form must also be submitted.

Fire Department: If a residential Fire Suppression System is required automatic sprinkler design drawings must be submitted for review by the City of Brentwood Division Chief Jeff Pender. Division Chief Pender can be reached at 615-371-0170

Planning & Engineering Departments: Is the property identified with a floodway or floodway fringe. If yes construction improvements will require review and approval from the Engineering & Planning Departments. Flood Resistant Construction: Properties located in the floodplain will require a Tennessee licensed surveyor to provide stamped and signed drawings showing the base flood elevation, the 100-year flood, and its relationship to all existing and proposed improvements.

All improvements in the floodplain shall comply with Chapter 56, Article II of the Municipal Code. For additional guidance contact City Planner-Todd Petrowski. (615) 371-2204.

WATER, SEWER, SEPTIC PROVIDERS

The Water & Sewer Department may also be involved with your project. Increases in the size of the water tap due to low water pressure, residential structure is equipped with automatic sprinkler system or request for irrigation tap. The size and location(s) of piping and tap(s) and fees is determined through the W&S Department. (615) 371-0080

Note, there are multiple water and sewer providers within the City of Brentwood. Please include water and sewer tap fees paid to providers or a tap certificate with plan submittal. City of Brentwood water and sewer fees will be collected at time of issuance of building permit.

Water providers include Brentwood, Harpeth Valley, Mallory Valley, Metro-Davidson, Nolensville **or** is a Water Well currently used.

Sanitary Sewer Service providers are Brentwood Sewer, Franklin Sewer, Metro-Davidson Sewer or currently on a Private Septic System.

Grinder Pumps- If grinder-pump is part of your sewer system: identify the location of pump/tank and electrical disconnect on site drawing.

Approval letter from Williamson County Waste Disposal Department for improvements to existing residential structures facilitated by a septic system. If sewer is available, existing residential structures undergoing improvements shall be connected to the sewer system. For private septic systems provide location of tank and septic field(s).

2) NEW SINGLE-FAMILY- REQUIRED DOCUMENTATION (IF APPLICABLE)

- Provide a complete set of drawings. Construction drawings to be scaled ¼" = 1' or greater. Maximum residential building height is 52' (OSRD-I Maximum is 40')
- Be advised, any modifications to the approved plans requires resubmittal and approval by all departments involved.
- A plot plan is required for new single family, additions, decks, covered porches, garages, pools, spas, gazebos, fences, play structures, retaining walls or any other proposed building expansion on the property. Plot plan to be scaled 1"= 20' for lots less than 1 acre or 1"= 30' for lots greater than 1 acre. (See #1 for copy count.) **A survey will be required for structures proposed in close proximity to building set-back lines, public utility and drainage easements and/or floodway fringe.**

Plot Plan to include:

- Property boundaries and building setback lines;
- House shall face front setback per recorded plat. Corner lots-minimum setbacks on front & side boundaries;
- Location(s) of retaining walls and abrupt elevation changes; (Note: abrupt elevation changes are areas on an improved parcel of property that does not fall under the requirements of Section R312.1, but require fall protection);
- Maximum lot coverage of all residential structures on any residential zoned property cannot exceed 25% building coverage. Calculation to be identified on submitted plot plan;
- Public utility and drainage easements identified;
- Identify all existing structures;
- Location of structure(s) within building envelope; including existing structures. A foundation survey may be required by Building Inspector prior to vertical construction when in close proximity;
- Driveway with curb cut location **AND size of culvert determined by Tennessee licensed professional** Note: 30' deep driveway required from garage door(s), maximum width at curb is 20' and maximum slope is 20%. [Code of Ordinances-Article 7-Construction Standards 7.7. (1) B&D, 78-486] Double access driveways require Planning staff approval. Driveways "proposed" in a P.U.D.E. or closer than 5' to the property line require Engineering Department approval;
- Location of debris dumpster and **portable restroom** [Code of Ordinances-78-20 (3) D] Note: Restroom facilities must be available to construction personnel on-site;
- Required city sidewalk shall be installed prior to final inspection. **Damaged existing sidewalks must be replaced prior to final inspection request;**
- Upon completion of a residential dwelling and prior to the issuance of the certificate of occupancy, any sub-divided home site shall have a minimum of 25 caliper inches of trees per acre. This amount shall be prorated depending on the total acreage of the lot, with no single lot required to plant more than 75-caliper inches of trees.

Footing and Foundation: <u>For transitional lots a Tennessee licensed professional engineer design is required</u>

- Footing/Pier locations and a cross section detail identifying depth, width and rebar; [R403];
- Foundation details including material to be used, wall thickness, height, rebar, anchor bolt size and location(s); [R404];
- Concrete-slab floor: Review radon sub-slab passive system requirements; [2018 IRC-Appendix F]
- Foundation waterproofing, damp-proofing and drainage details; [R405 & R406];
- Crawl space access, ventilation (vented or unvented) [R408].

Building Information:

- Front, rear, left-side, side elevations. Basements: Elevation drawings to include 50%-50% coverage and provide lineal feet of coverage to lineal and perimeter feet of daylight. [Code of Ordinances-Chapter 78];
- Height of structure: Maximum permitted height of structures, two stories (measured from the grade level at the front elevation of the structure) or a total of three stories if a full or partial underground basement level is included, provided that one-half of the perimeter walls of the basement level must be at least 50 percent below grade level. For purposes of this section, a finished or unfinished attic floor with dormer windows shall not be counted as a story. In no event shall the maximum height exceed 52 feet, measured from the lowest ground level of the structure to the highest point of the roof
- 1st floor plan (if applicable) [Floors-Chapter 5];
- 2nd floor plan (if applicable);
- Basement floor plan (if applicable);
- Identify all bedrooms on all floors including basement and attic area (if applicable);
- Provide stairs, handrail and guardrail details (if applicable) [R311 & R312];
- Window opening size in bedrooms, tempered-safety glazing locations, fall protection locations (Operable window sill minimum 24" from floor where more than 72" from grade); [R312];
- Identify location of "means of egress" door (32" clear width and 78" in height) [R311];

Building information continued:

- **Provide landing elevation at required egress and "other" exterior doors; [R311.3]**
- Minimum 36" width hallway required [R311.7];
- Minimum 36" width stairway with 80" headroom; vertical rise less than 12' for flight of stairs;
- Ramps [R311.8.1];
- Identify types (masonry, factory-built, gas, wood burning, gas log-lighter, etc.) and locations of chimney and fireplaces. Provide manufacturer's specifications.

Framing Information – Details:

- Provide cross sectional detail (foundation to roof); include lumber grade/type/species, size, spacing, room heights, etc.;
- Floor & Deck assemblies (provide structural details and materials to be used for each individual floor and/or deck assembly; including method for attaching to main building) ([R507];
- Stud walls in basement and floors above (2x4, 2x6, height of wall) [Walls-Chapter6];
- Directional layout of framing members (floor, ceiling joists, rafters, trusses, etc.);
- Engineered lumber layout sheets and calculations for all engineered lumber (LVL's, I-Joist, beams, floor joists, floor trusses, etc.);
- Wall Bracing: When a building, or portion thereof, does not comply with one or more of the bracing requirements in this section those portions shall be designed in accordance with Section R301.1 & R602.10 (Consult with design professional);
- Provide detail(s) of flashing at window & door openings [R703.8] Corrosion-resistant flashing shall be applied in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. [R703.8] Any one of the following criteria may apply for flashing at window and door openings: The fenestration manufacturer's installation and flashing instructions, the flashing manufacturer's instructions, pan flashings required when instructions not provided, design or method of a registered design professional;
- Stone & Masonry Veneer- Openings & Maximum Heights [R703.7] (load design details);
- Roof & Ceiling framing details [Chapter 8] Rafter ties [802.3.1] Ceiling Joist Spans [R802.4], Purlins [R802.5.1], Rafter Spans [R802.5], Bearing [802.6], Wood Truss Design, Uplift Resistance [R802.11] [Chapter 9];
- Identify roof Ventilation Details [R806];
- Attic layout including proposed storage, finished habitable space or future space; include square footage and location(s) of attic access. (if applicable) [Attic space or concealed roof space exceeding 2,000 square feet requires 2 attic access points installed remotely and shall be placed a distance apart not less than one-half of the length of the maximum overall diagonal dimension of the attic area] A minimum of one pull-down stairs shall be installed. (25"x 54"rated for 350lbs+] [Code of Ordinances-Chapter 14];
- Elevator details including manufacturer's specifications [R321]

Smoke Alarms and Carbon Monoxide Alarms / Detectors:

- Location(s) of smoke alarms-detectors [R314];
- Location(s) of carbon monoxide alarms-detectors [R315];

Foam Plastic:

- Is foam plastic/insulation proposed in crawlspace, walls and/or attic. **Provide ICC-ES reports** [R316] Foam Plastic Requirements are located in section R316;
- Labeling & Identification (provide documentation)
- Surface burning characteristics (provide documentation)
- Thermal barrier requirements (provide documentation)
- Specific requirements (provide documentation)
- Installation in attic spaces (provide documentation) (use: storage, equipment)
- Installation in crawl spaces (provide documentation (use: storage, equipment)

Mechanical System Requirements: [Chapters 12 through 24 of the 2018 IRC]

- Heating and cooling equipment shall be sized in accordance with ACCA Manual S based on building loads calculated in accordance with ACCA Manual J or other approved calculation methodologies. Calculations to be provided/submitted at plan review stage. [R403]***; Section R403.2.2—Ducts, Sealing of the International Energy Conservation Code, 2012 edition is amended to read, "Mechanical Duct, Air Handler, and Filter Box tightness shall be verified by either of the following: Post construction test with total leakage less than or equal to 6 cfm-per 100 square feet of conditioned floor area OR rough-in test with total leakage less than or equal to 5 cfm.***
- Identify type and location(s) of equipment (natural gas, propane, electric, geo-thermal, solar, radiant heat, etc.) [M1403];
- Identify appliance access for inspection, service, repair and REPLACEMENT. [M1305];
- Elevation of ignition source; see exception [M1307.3] Protection from impact [M1307.3];
- Identify combustion air source for gas-fired equipment (natural, louvers and grilles, mechanical);
- Identify clothes dryer exhaust routing [M1502] [metal, minimum 4" dia. and terminate outside];
- Identify bathroom ventilation-**termination location(s);**
- Gas piping systems require electrical bonding [G2411 & G2412] Identify piping material (metallic, copper, CSST, polyethylene plastic pipe, etc.);
- Gas appliance shut-off valves. Shut-off valve shall be located in the same room as the appliance within 6 feet. [G2420.5];
- Permanently fixed-in-place outdoor decorative appliances shall be tested in accordance with ANSI-Z21.07 and shall be installed in accordance with the manufacturer's instructions [G2454.1].

Plumbing System Requirements: [Chapters 25 through 33 of the 2018 IRC]

- Identify location and type of internal sump and/or ejector pump [P3007]
- Identify location of exterior grinder pump [Contact W&S Department for guidance: 615-371-0080]
- Pipes through foundation walls [P2603.5] "The requirement for a pipe sleeve or a relieving arch for pipes passing under a footing was removed because the footer acts as the relieving arch for the pipe below." (Not to be incorporated into footing-pour)

Energy Requirements:

- Provide documentation that structure is compliant to the 2012 International Energy Conservation Code. [i.e. RESCHECK or equivalent];
- Projects shall comply with sections identified as mandatory and with sections identified as either prescriptive or the performance approach.
- A permanent certificate shall be completed and posted on or in the electrical panel [IECC R401.3];
- Building thermal envelope- The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 7 air changes per hour. Testing shall be conducted with a blower door at a pressure of 50 Pascal's (1 psf). The Building Official can require third-party testing agency. Written report to be submitted by the party conducting testing. [R402] (AIR LEAKAGE TEST REQUIRED);
- Recessed lighting shall be sealed to limit air leakage. [R402.4.];
- Thermostats shall be provide for each HVAC system [R403];
- Ducts, air handlers, and filter boxes shall be sealed. [R403.2];
- Building framing cavities shall not be used as ducts or plenums [R403.2.3];
- Mechanical system piping capable of carrying fluids above 105 degrees or below 55 degrees shall be insulated to a minimum R-3 [R403.3];
- Circulating hot water systems shall be provided with an automatic or readily accessible manual switch that can turn off the hot-water circulation pump when system is not in use. [R403.4.];
- Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating. [R403.5]
- A minimum of 50% of the permanently installed lighting fixtures shall be high-efficacy lamps. [R404]