

# City of Brentwood



## RESIDENTIAL CONSTRUCTION CITY INSPECTION PROCESS

UPDATED NOVEMBER 1, 2013



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City of Brentwood  
Planning and Codes Department  
5211 Maryland Way  
P.O. Box 788 (37024-0788)  
Brentwood, TN 37027

Office Hours: Monday-Friday 7:30am-4:30pm  
Office: (615) 371-2204  
Fax: (615) 371-2233  
**City Codes Inspection Request Line (615) 661-7077**

Please visit our website at: **[www.brentwood-tn.org](http://www.brentwood-tn.org)**  
for additional information including downloadable  
applications and documents.

**State of Tennessee Electrical & Low Voltage  
State Electrical Request Line (615) 577-6161  
State Electrical Permits (615) 577-6160**

## NOTES



RESIDENTIAL CONSTRUCTION  
CITY INSPECTION PROCESS  
UPDATED November 1, 2013

## Table of Contents

	Page
IMPORTANT NOTE!	4
ADOPTED BUILDING CODES	4
INSPECTION PROCESS FOR RESIDENTIAL CONSTRUCTION	5
GENERAL INFORMATION	5
PRINCIPAL CITY INSPECTIONS:	6
FOOTING AND/OR FOUNDATION INSPECTION(S)	6
SLAB AND/OR RADON INSPECTION	8
FOUNDATION WATER-PROOFING	8
CRAWL SPACE / BASEMENT INSPECTION	8
EXTERIOR WALL COVERING AND FLASHING INSPECTION	8
ROUGH-IN (FRAMING, PLUMBING & MECHANICAL) INSPECTIONS	9
INSULATION INSPECTION	9
ELECTRICAL INSPECTIONS	9
WATER & SEWER INSPECTION	10
FINAL INSPECTION	10
SWIMMING POOL INSPECTIONS	12
TRANSITIONAL LOTS (STEEP GRADES)	12
EROSION CONTROL PRACTICES	13
OPEN BURNING / STORAGE AND REFUSE REMOVAL	13
SOLAR PANEL EQUIPMENT	13
BUILDING CODE & CITY REFERENCES	14
BACK COVER-CONTACT INFORMATION	16

## **IMPORTANT NOTE!!**

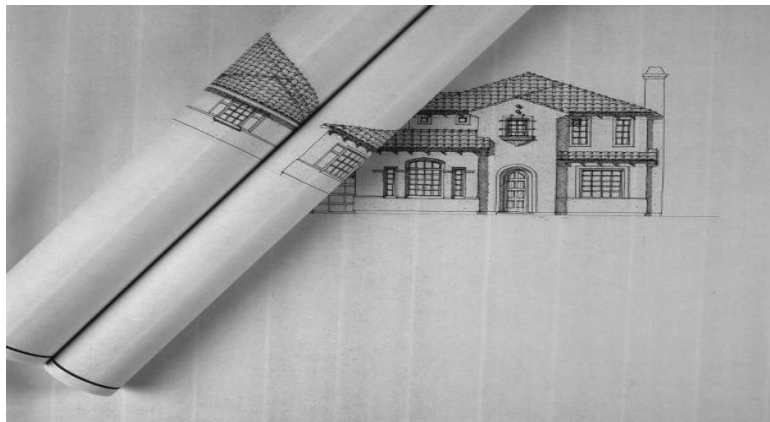
### **THE CONTENT OF THIS DOCUMENT IS NOT ALL INCLUSIVE**

This pamphlet provides information relating to the residential building code inspection process for the City of Brentwood. The goal is to acquaint our builders and residents with those rules affecting residential construction; more detail is available by contacting the City of Brentwood, Planning and Codes Department at (615) 371-2204 from 7:30 a.m. to 4:30 p.m. (Monday thru Friday) or visit our webpage at [www.brentwood-tn.org/planning](http://www.brentwood-tn.org/planning) (Planning & Codes Department/Applications & Documents)

Please note that you may have homeowner's association rules or deed restrictions in your subdivision that are more restrictive on the use of your property than city codes. You should research these restrictions to avoid any additional problems or issues with the residents in your neighborhood.

## **ADOPTED RESIDENTIAL CODES**

- 2012 International Residential Code for One- And Two-Family Dwellings Code (ICC), including appendices E and F
- 2009 International Energy Conservation Code (ICC-IECC)
- 2008 National Electrical Code (NEC)
- City of Brentwood 'Special Guidelines for Electrical Installation'

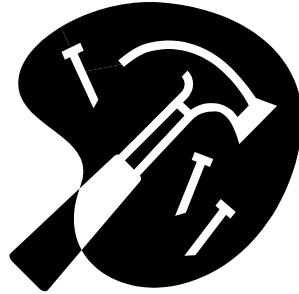


R302.12 & City Ordinance/14-68(6) Draft-stopping  
 R802.8.1/Bridging  
 R802.9/Framing of Openings (Roof and Ceiling)  
 City Ordinance/14-68(5)/Attic Access  
 R905/Roof Coverings and Underlayment  
 R1001/1003/Masonry Chimneys and Fireplaces  
 R1001.11/Fireplace Clearance (Masonry)  
 R1003.18/Masonry Chimney Clearances  
 R1004/1005/Factory-Built Fireplaces  
 R1001.9/1001.10/Hearth Extension Dimensions  
 M1306/Appliance Clearances  
 M1307/Appliances Installation  
 Chapter 14/Heating & Cooling Equipment  
 M1502/Clothes Dryer Exhaust  
 Chapter 17/Combustion Air  
 G2417/Gas Test/Test Pressure-15 psi (City of Brentwood)  
 P2503.5.1/DWV Testing  
 P2503.6/Shower liner test  
 P2503.7/Water Supply System Testing/Test Pressure 100 psi  
 P2603.4/Plumbing Sleeves  
 P2603-2604/Trenching, Bedding & Pipe Protection  
 P2720.1/Whirlpool Bathtubs-Access Panels  
 P2902 & City Ordinance/70-176 to 182/Protection of Potable Water Supply

*The City of Brentwood is committed to answering your questions and addressing your concerns. This pamphlet was created to provide guidance on basic codes affecting residential property and to identify the appropriate department to contact for more information. It is not intended to be comprehensive guide on the code requirements for builders in Brentwood. This reference compiled by the City of Brentwood is not intended to be an all-inclusive list.*

## HELPFUL SECTIONS OF THE 2012 INTERNATIONAL RESIDENTIAL CODE:

R101.3/Minimum Standards  
 R102.4/Referenced Standards  
 R106.3.1/Plans On Jobsite  
 R303.3/Bathroom Ventilation  
 R305/Ceiling Height  
 R308/Tempered Glass  
 R309/Garages and Carports  
 R310/Emergency Egress  
 R311/Exits  
 R311.7.6/Landings  
 R311.7./Stairways  
 R311.7.8 & R312/Handrails & Guardrails  
 City Ordinance/14-68(7)/Protection at abrupt elevation change  
 R314/Smoke Detectors  
 R315/Carbon Monoxide Alarms  
 R316/Foam Insulation/ICC-ES Reports  
 Appendix F/Radon Control Methods  
 R403/Footings  
 R404/Foundation & Retaining Walls  
 R405/Foundation Drainage  
 R406/Foundation Waterproofing & Damp-proofing  
 R408/Under-floor Space  
 R502/Wood Floor Framing  
 R602/Wood Wall Framing  
 R703/Exterior Covering  
 R703.2/Weather-Resistant Sheathing Paper  
 R703.8/Flashing  
 R801.3/Roof Drainage  
 R802/Roof-Ceiling Construction  
 R802.3/Framing Details  
 R802.5.1/Purlins



## INSPECTION PROCESS FOR RESIDENTIAL CONSTRUCTION

The City of Brentwood has compiled this reference to provide a brief overview of the City inspection process for residential construction. The guide assists contractors, homeowners, superintendents, and trades people conducting work in the City of Brentwood. .

Though the guide provides an overview of our inspection process, the format can not provide a comprehensive listing of all code issues that may affect any given residential project. Construction professionals should secure a copy of the adopted code for the City of Brentwood, *International Residential Code For One- and Two-Family Dwellings (2012 edition) and International Energy Conservation Code (2009 edition)*. Sections and chapters cited in this narrative relate to the adopted code. Copies of the code can be easily secured from ICC by calling 1-800-786-4452 or through their website at [www.iccsafe.org](http://www.iccsafe.org).

**General Information** – City building inspectors will make both routine and required inspections during construction of the residence. It is the responsibility of the builder or permit holder to call the Codes Enforcement Section - Inspection Request Line at (615) 661-7077 (available 24/7) to schedule the necessary inspections. All inspections called in after 7:30 a.m. will be conducted the following day. Should more detailed questions arise, contact our inspection officials at (615) 371-2204. **For electrical and low voltage inspections, contact the State Electrical Inspector at (615) 577-6161. State electrical inspections must be completed prior to City of Brentwood rough-in and final inspections.**

Typical inspections include footing/foundation, foundation waterproofing and drainage, slab & radon, slab/radon/plumbing, crawl space/basement (prior to subfloor), exterior wall covering & flashing, rough-in (framing, plumbing, mechanical), insulation, water/sewer, deck footings, pool fence, pool plumbing rough-in, pool final, and building final. (Other department approvals may be required for final) **A reinspection will not be completed until re-inspection fee(s) are paid.**

**Building Hours of Operation** - Building activities are limited by city ordinance to the hours between 7:00 a.m. and dark on Monday through Saturday, and between 9:00 a.m. and dark on Sunday. Emergency situations may allow a waiver from the building inspector under certain guidelines not to exceed 30 days.

**Project Posting** - Applicant shall provide project identification by lot number and street address at the job site location. Identification shall be visible from the street; identification on erosion silt fence is **not** acceptable. A copy of approved plans shall be kept on the site of the building or work area at the time of inspection(s) (R106.3.1). The permit holder or his agent shall also post the inspection record/permit card on the job site in an accessible and conspicuous place to allow the inspectors to make required entries on the record (R105.7).

**Hint: Chapter 3 of the 2012 International Residential Code identifies a majority of issues that are found on our correction lists. Please review.**



## **PRINCIPAL CITY INSPECTIONS:**

### **Footing and/or Foundation Inspection(s)**

Inspections for footings and/or foundations shall be made after piers or trenches are excavated; forms have been erected; and all reinforcing steel is in place. **The inspection shall occur before any placement of concrete.** Footing inspections shall include excavations for thickened slabs intended for the support of load bearing walls, partitions, structural supports, and/or equipment (R401-R404). Lots classified as ‘transitional’ shall have all footings, foundation walls, etc. designed and inspected by a Tennessee registered architect/engineer.

The builder’s engineer may inspect the project footing and foundation with proper documentation. **This procedure requires notification to the codes office on the day of inspection, and submittal of an approved letter from the engineer within three days of the inspection.** Builders utilizing an engineer to inspect the project footings shall also have the engineer inspect the foundation and submit acceptable documentation to the City of Brentwood Planning & Codes Department. For transitional lots, this documentation shall be provided to both the Planning & Codes Department and the Engineering Department.

## **Erosion Control Practices (cont.)**

**A site inspection of the erosion control is required, prior to permit issuance (new construction, additions, swimming pools, etc.) and shall be maintained thru-out construction. Only staked hay bales and siltation fences properly installed will be accepted. Builders should consult with codes inspectors / city engineers (non-transitional / transitional lots) regarding proper erosion control placement.**

Stormwater runoff from disturbed areas five acres or greater shall pass through a sediment basin or other suitable sediment trapping facility. All storm drainage inlets shall be protected during construction with a sediment barrier to prevent clogging and localized flooding.

### **Open Burning**

No open burning is allowed for individual home construction sites, and is expressly prohibited by the code. Properties in excess of 20 acres may be permitted for burning to clear vegetation from a site. Permits shall be obtained in advance from the Brentwood Fire Marshall (615-371-0170).

### **Storage and Removal of Refuse**

The storage and removal of refuse and trash from construction sites shall be accomplished through the use of dumpsters. The location of the mandatory dumpster shall be identified on the site plan for the construction site, and is approved as part of the building permit.

### **Solar Equipment Installations**

Contact the Planning & Codes Department regarding additional documentation that may be required when installing solar equipment. (Imposed dead-loads to the existing roof assembly, how equipment is secured to the structure, designed for 90 mph wind speeds, protection from leakage, etc.) If the equipment is located on the ground, it shall be placed in the rear buildable area of the lot.

## Swimming Pool Inspections

All swimming pools, spas, and hot tubs shall be installed following adopted code standards. **Due to safety concerns, temporary pool fences shall be installed once excavation begins. No test filling of the pool shall be permitted prior to the erection of a temporary wire protective fence or placement of the permanent fence enclosure.** No inspection will be conducted by City or State inspectors until permanent or temporary barricade has been installed. Where special conditions exist, the area inspector will determine minimum protection requirements. **Any temporary fence-barrier must be maintained until the permanent fence enclosure is 100% complete.** Review the “Residential Swimming Pool Inspection Process” document and the “Residential Swimming Pool, Spa and/or Hot Tub” permit application for additional requirements. Visit the “Applications and Documents” section at [www.brentwood-tn.org/planning](http://www.brentwood-tn.org/planning).

## Transitional Lots (Steep Grades)

Land disturbance and other forms of site excavation on steeper lots can contribute to the degradation of land surfaces and streams. Associated problems include erosion, siltation, earth slides, dusty conditions, clogged storm sewers, increased water runoff, and localized flooding. To prevent such problems, **all residential lots possessing a building area grade of fifteen percent or greater shall receive special review by the City’s Engineering Department.** These lots are termed “transitional lots”. A special land disturbance plan must be developed to address grading, erosion control, and sediment trapping at the construction site. The plan shall also identify final stabilized conditions for the site. The City’s Engineering Department shall review transitional lot issues prior to any associated permitting (615-371-0080).

## Erosion Control Practices

All properties adjacent to and/or downhill from a construction site shall be protected from soil erosion and sedimentation. This shall be accomplished by preserving a well-vegetated buffer strip around the lower perimeter of the land disturbance or by installing perimeter controls such as sediment barriers, filters or dikes, or sediment basins, or by a combination of such measures.

## Specifications – Helpful Notes:

**Deck Footings:** Minimum size shall be 24 inches (L) by 24 inches (W) by 12 inches (D). Upon inspection approval, a minimum of 8 inches thickness of concrete is required for the supporting posts to rest upon. Designed footings in excess of this requirement shall be installed following approved plans.

**Foundation Anchorage:** The wood sill plate at exterior or bearing walls shall be anchored to the foundation with minimum half-inch (½”) diameter anchor bolts spaced a maximum of 6 feet on center. Anchor bolts shall also be located a maximum of 12 inches from all exterior corners (R403.1.6). Follow manufacturer’s specifications on all anchor straps installations. Provide specification details during the crawl space / basement inspection (see pg. 8)..

**Foundation Drainage:** Drains shall be provided around all concrete or masonry foundations that retain earth and enclose habitable or usable spaces located below grade. (R405)

**Foundation Waterproofing or Damp-proofing:** Waterproofing or damp-proofing is required at exterior foundation walls that retain earth and enclose interior spaces and floors below grade. (R406.1 & R406.2)

**Foundation Walls / Retaining Walls:** An engineered design shall be required for concrete or masonry foundation walls supporting 48 inches or more of unbalanced backfill which do not have permanent lateral support at the top and bottom (R404.1.3).

**Multiple Trade Inspection Projects:** Plumbing and mechanical rough-in & final inspection requests will not be completed until the general contractor requests the building inspection portion of the project. Please contact area inspection when special circumstances arise for plumbing and/or mechanical inspections to be completed prior to building inspection.

A foundation survey shall be submitted to the codes enforcement office within seven (7) days of the foundation/footing inspection, and prior to any framing work. Failure to submit the survey shall result in the issuance of a “NO FRAMING ORDER” to be posted on the property.

## Slab Inspection

Prior to placement of concrete, a slab inspection shall be required for all plumbing and isolated pier footings located underneath concrete slab locations. In-slab plumbing waste water test: “Each section shall be filled with water to a point no less than 10 feet above the highest fitting connection in that section, or to the highest point in the completed system. Water shall be held in the section under test for 15 minutes before inspection. The system shall prove leak free by visual inspection.” (P2503)

## Radon Inspection

The adopted code recognizes the City of Brentwood as a hazard area with respect to the probable presence of radon in site soils and rock strata. New dwellings permitted as of 09/01/1999 shall be constructed to resist radon entry and prepare the building for post-construction radon mitigation, if necessary (Appendix F/AF103 of the IRC / 2012 edition).

## Foundation Water-Proofing and Drain Inspections

Prior to coverage, an inspection is required to ensure the foundation walls have been waterproofed with an approved material and the foundation drain tile has been installed in accordance with IRC Sections R405 *Foundation Drainage*; R406 *Foundation Waterproofing and Damp-proofing*.

## Crawl Space/Basement Inspection

Prior to the installation of the first-floor subfloor, an inspection is required to ensure correct installation of the mud sill plate anchoring system; support piers, beams, girders, joists, crawl space slope & positive foundation drain; and, if applicable, squash blocking and blocking panels. See Section R408 Under-Floor Space.

## Exterior Wall Covering and Flashing Inspection

This inspection involves the weather-resistant exterior wall envelope. At the time of the inspection, all exterior walls are to be covered and a minimum of 30% of all thru-wall flashing installed in order to ascertain if the flashing is being installed in accordance with IRC Section R703 *Exterior Covering*. A copy of the weather-resistant exterior wall envelope Manufacturer’s Installation Instructions shall be provided on site for reference by the building inspector. Same for exterior door & windows (Manufacturer’s Installation Instructions).

layout, grading and drainage, exterior stairways, **fall protection at abrupt grade elevation changes**, guardrails and deck construction. Interior issues include light and ventilation, **energy code compliance**, safety-glazing at hazardous locations, emergency egress from bedrooms, fire-stopping in the garage area, **attic accesses**, interior stairways, smoke & **carbon dioxide detectors**, fireplaces/furnaces, water heaters, whirlpool tub access, combustion air, attic/crawlspace ventilation and access. Any deviation from the approved plans will delay the issuance of a certificate of occupancy until the site and/or structure is brought into compliance with the approved plans.

Please be aware that no alterations or modifications can be made to the site, utilities, drainage, landscaping or other plans approved by the Brentwood Planning Commission without formal approval of the changes by the Planning Commission. All requests shall be made in writing to the Planning & Codes Director, and shall include a site plan detailing all proposed changes.

**Cross-connection prevention devices shall be installed and tested on irrigation & fire suppression systems connected to the public water supply. Contact the Planning & Codes Dept, (615-371-2204) regarding both permitting and Initial Test Reporting. Contact the Water Dept. (615-371-0080) regarding Annual Test Reporting.**

A final inspection must also be conducted by the City’s Engineering Department on new single family residences and new work that could affect site drainage on existing residences located on transitional lots (15% slope or greater).

## Temporary Certificate of Occupancy

A temporary certificate of occupancy may be granted by the Planning & Codes Department, however, all departments involved must approve. It is the responsibility of the applicant to contact departments well in advance when a temporary certificate of occupancy is needed. A \$2,000.00 fee is required for the issuance of a temporary C/O. Upon re-inspection and issuance of a full C/O, a sum of \$1,500.00 will be refunded to the applicant that originally paid the fee if all outstanding items are resolved within 60-days of issuance of the temporary certificate of occupancy. Applications for both the Temporary C/O and Refund Request can be obtained in our lobby or online under the Applications and Documents Section. [www.brentwood-tn.org/planning](http://www.brentwood-tn.org/planning).



Williamson County at this location except City of Franklin. Contact Bill Fox at (615) 577-6160; his office hours are 8 a.m. to 12 p.m., Monday through Friday. **After obtaining a permit, it is the responsibility of the permit holder to contact the state electrical inspector-Scott Mulligan so as to request an electrical inspection.** Scott is in the office Monday through Friday from 8-a.m. to 9-a.m. and can be reached at (615) 577-6161 or to request an inspection; automated line will pick up 24/7.

## Water & Sewer Inspection

The Codes Department will review and inspect gravity lines for Brentwood sewer service. Both the Codes Department **and the Water & Sewer Department** will inspect sewer services with **grinder pumps**. Both departments will inspect the grinder pump installation at the rough-in water/sewer inspection and at the final inspection stages. Be sure to contact the Water & Sewer Department (615-371-0080) for initial plan review on grinder pump systems and to schedule inspections during installation of such systems.

Metro sewer service located within the city limits of Brentwood is required to be inspected by the Metro Sewer Department. Approval/Notification by Metro Sewer Department is identified by painting the clean-out closest to foundation “blue” in color. Metro sewer systems are not inspected by City of Brentwood.

### Specifications – Helpful Notes:

Maintain a five-foot separation between water and sewer lines (P2904.4.2). Be sure to satisfy the following requirements: pipes through footings or foundation walls (2603.5); breakage and corrosion protection (2603.3); sleeves (2603.4); trenching and bedding (2604.1); and backfilling (2604.3). Cleanouts shall be required for every 100 feet of run and shall be placed 18 inches to 36 inches from the outside of the foundation wall. **A clean-out is also required at /near the property line; public/private connection.**

## Final Inspection

As stated in the code, “Final inspection shall be made after the building is complete and prior to occupancy.” (R109.1.6). Some of the major exterior construction issues that are reviewed include: driveway

## Rough-In Inspection / Framing, Plumbing, and Mechanical (see note on page 7)

Rough-in framing, plumbing, mechanical, and electrical (see also ‘Insulation Inspection’ below) inspections shall be made prior to covering and concealment (P2503.2). Finished roof shall be completed prior to rough-in inspection, and all framing, fireblocking, firestopping, draftstopping and bracing shall be in place. **Gas service inspection** (15 psi for 15 minutes) shall be made after all new piping has been installed (Chapter 24 / fuel-gas piping). **Water service inspection** (100 psi for 15 minutes) is performed on completion of the plumbing installation. **Sanitary plumbing** to be tested with water; see testing requirements under slab inspection.

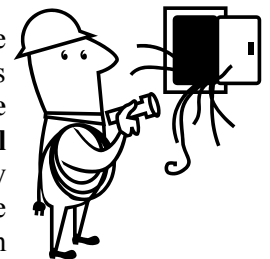
Note: City of Brentwood standards for this test exceed the International Code standard of 50 psi. Minimum pressure and maximum pressure standards shall be met on the installation (P2903.3 and P2903.3.1). A 10-foot head test is required on all drain, waste and vent piping (2503.5.1).

## Insulation Inspection

The wall cavity insulation inspection occurs after the building, electrical, mechanical, and plumbing rough-in inspection(s) have been completed, and prior to concealment.

## Electrical Inspections

Electrical services cannot be provided to the customer until an approved electrical inspection is made. **The electrical power suppliers of the region require a rough-in inspection and a final inspection.** The City of Brentwood is served by both Nashville Electric Service (NES) and Middle Tennessee Electric Membership Corporation (MTEMC).



**All electrical and low voltage permits and inspections are completed through the State of Tennessee Fire Marshall’s Office.** The City of Brentwood furnishes office space for State of Tennessee representatives for the convenience of residents, builders, and contractors. Electrical permits may be secured for any location in