

Building Criteria Manual

SECTION 4 RESIDENTIAL CONSTRUCTION

4.1.0 GENERAL

This section applies to one- and two- family dwellings and townhouses in the jurisdiction of the City of Austin. Residential construction must comply with the Austin City Code and the adopted International Residential Code. Austin's Land Development Code (LDC) is Chapter 25 of the City Code.

The technical code local amendments are located in the City Code Chapter 25-12 and can be accessed online at:
https://www.municode.com/library/tx/austin/codes/code_of_ordinances

Individual technical code ordinances are also available online at:
<http://www.austintexas.gov/department/building-technical-codes>

For an overview of the residential process, related applications and additional information, refer to the Austin website at:
<http://www.austintexas.gov/department/residential-building-review>

4.2.0 RESIDENTIAL APPLICATION

For residential related applications, checklists and other forms and information, refer to the Austin website at:

<http://www.austintexas.gov/page/building-applications#res>

For information and resources about the Residential Design and Compatibility Standards, refer to the Austin website at:

<http://www.austintexas.gov/department/residential-design-compatibility-standards>

4.3.0 RESIDENTIAL DEMOLITION

For demolition and relocation of structures, refer to the Austin website at:

<http://www.austintexas.gov/department/demolition-relocation>

4.4.0 RESIDENTIAL SUBMITTAL REQUIREMENTS

This section provides detailed information on the requirements for submitting residential construction plans. A checklist summarizing the "Submittal Requirements" is provided on the Austin website at:

<http://www.austintexas.gov/department/residential-building-review>

4.4.1 New, Addition, Remodel

4.4.1 Construction Plan Guidelines

4.4.1.1 Paper Size:

Large format sets shall be no smaller than 11" x 17" and no larger than 24" x 36". Small format sets shall be no smaller than 8 1/2" x 11" and no larger than 11" x 17".

4.4.2 Fences, Landscape, Swimming Pools

4.4.2 Legibility and Standards for Scale

4.4.2.1 Scale:

All drawings submitted for permit review must be drawn to an acceptable scale. All drawing elements and text must be visible and legible at the selected scale. The drawing scale must be noted on each drawing (e.g. SCALE: 1/8" = 1' -0")

- 1) Engineer scale: acceptable for use on plot plans, site plans, surveys.

$$\underline{1'' = 10'}$$

$$\underline{1'' = 20' \text{ (common)}}$$

$$\underline{1'' = 30' \text{ (common)}}$$

$$\underline{1'' = 40' \text{ (common)}}$$

$$\underline{1'' = 50'}$$

$$\underline{1'' = 60'}$$

- 2) Architect scale: acceptable for use on all architectural and structural plans, plot plans, site plans, surveys.

$$\underline{1/16'' = 1' \text{ (common)}}$$

$$\underline{3/32'' = 1'}$$

$$\underline{3/16'' = 1'}$$

$$\underline{1'' = 1'}$$

$$\underline{1/2'' = 1' \text{ (common)}}$$

$$\underline{1/8'' = 1' \text{ (common)}}$$

$$\underline{1/4'' = 1' \text{ (common)}}$$

$$\underline{3/4'' = 1'}$$

$$\underline{3/8'' = 1'}$$

$$\underline{1 \ 1/2'' = 1'}$$

$$\underline{3'' = 1'}$$

4.4.2.2 Text:

All text on drawings must be visible and legible. Text shall be no smaller than 1/16" when printed on required paper sizes. Font selection shall be a legible, non-script font. Line weight (thickness) of text shall not be so heavy as to obscure the text.

- 1) Common text heights (notes and dimensions)

$$\underline{3/32''}$$

$$\underline{1/8''}$$

- 2) Common text heights (drawing titles and title blocks):

$$\underline{3/16''}$$

1/4"
3/8"
1/2"

3) Common fonts:

Arial

Helvetica

Calibri

Verdana

Times New Roman

Architectural lettering fonts such as City Blueprint, Country Blueprint, Architxt.

4.4.2.3 Line Weight:

Line weights should be varied on permit exhibits in order to differentiate between items displayed on the drawings. All lines should be visible on all submitted drawings.

4.4.3 Express

4.4.3 Permit Exhibits

4.4.3.1 Plot Plan:

Plot plans must be drawn to an acceptable scale. Plot plans are to include but are not limited to the following items:

- property address
- legal description
- north arrow
- drawing scale
- critical root zones of trees equal to or greater than 19 inches in diameter located on the property and/or on immediately adjacent properties or rights of way
- dimensioned property lines and property pin locations
- adjacent rights of way, including name, width and surfacing material
- existing and proposed improvements with exterior wall dimensions
- high and low point of grade adjacent to each structure
- permanent benchmark
- easements
- required zoning setbacks
- roof overhangs
- water meter and wastewater cleanout locations
- underground and overhead utility lines and appurtenances
- driveways and driveway aprons
- storm sewer inlets and/or manholes
- sidewalks both located on the property or within the ROW
- pools/spas

- water and/or wastewater line size and material
- septic location and drain field (if applicable)
- other impervious surfaces located on the property
- regulatory boundaries (city limit lines, zoning district boundaries, flood plain boundaries, etc.)

4.4.3.2 Floor Plans:

Floor plans must be drawn to an acceptable scale. Label each exhibit (e.g. Existing First Floor Plan, Demo Plan, Proposed Floor Plan, etc.) appropriately and provide north arrow indicating plan's orientation. Label all rooms, including names, size, and ceiling height. Provide wall layout with partial and overall dimensions. Provide fire rating as applicable and include all walls, doors, windows, stairs, guardrails, kitchen layout, bathroom layout, appliances, etc.

4.4.3.3 Elevations:

Elevations must be drawn to an acceptable scale. Label each exhibit appropriately and reference them to plans. Include front, rear, and side elevations, including patio covers, decks, and fireplaces. Label finished grades, interior and exterior finished floor. Provide vertical dimensions from interior finish floor to top of plate, window sill, or header. Specify finish materials (stucco, concrete block, roofing systems, siding, veneers, etc.). Label roof slopes. Dimension length of horizontal projection of eaves. Display building height, in accordance with Austin City Code. Label high and low point of grade adjacent to structure, average adjacent grade, and vertical distance to applicable roof point.

4.4.3.4 Sections:

Section drawings may be required when submitting drawings. These can help provide information on many things including but not limited to structural clarification, ceiling heights, attic spaces, and basements. When provided, title each section and provide key designating location on plan. List the scale applicable to the section drawing (must be an acceptable scale). Label all pertinent information.

4.4.4 Volume Builder

4.4.4 Structural Plans

4.4.4.1 Foundation Requirements:

Foundation Plans and details for private dwellings and accessory structures located on expansive soils must be designed and sealed by a Texas Registered Engineer.

- 1) Suspended foundation (foundations with a crawl space) plans and details must show conformance to the provisions of the currently adopted IRC to include but not limited to the following items:
 - a. Dimensioned locations of all piers/masonry footings/concrete footings
 - b. Pier/footing sizes and depth below grade
 - c. Concrete compressive strength
 - d. Size, spacing and strength of reinforcing steel

- e. Size and spacing for all above-grade foundation system members (beams, girders, etc.)
- f. Anchorage of super structure to foundation (type of anchor, size, embedment depth, spacing)
- g. Foundation requirements at braced wall panels
- h. Connection to existing foundation when present

2) Slab-on-grade foundation plans and details must show conformance to the provisions of the currently adopted IRC to include but not limited to the following items:

- a. Dimensioned slab layout plan including locations of interior beams, changes in slab elevation, and slab openings
- b. Beam sizes (width and depth)
- c. Concrete compressive strength
- d. Size, spacing and strength of reinforcing steel
- e. Anchorage of super structure to foundation (type of anchor, size, embedment depth, spacing)
- f. Foundation requirements at braced wall panels
- g. Connection to existing foundation when present

3) Footings for decks, pergolas, covered patios, carports, etc. shall be of sufficient detail to show conformance to the provisions of the currently adopted IRC to include but not limited to the following items:

- a. Dimensioned locations of all concrete footings
- b. Footing sizes and depth below grade
- c. Concrete compressive strength
- d. Size, spacing and strength of reinforcing steel
- e. Connection details for super structure to foundation

4.4.4.2 Wood Framing Requirements:

Wall and floor/ceiling/roof framing plans and framing sections and details, must show conformance to the provisions of the currently adopted IRC. Plans should include lumber size, grade, and species.

- 1) Wood framed wall plans and details must show at a minimum:
 - a. Stud spacing
 - b. Wall height
 - c. Header sizes, spans, material type
 - d. Typical wall details
 - e. Connection details for wall-to-foundation, wall-to-floor, and wall-to roof
 - f. Anchorage to foundation
- 2) Wood framed floors (conventional framing) plans and details must show, at a minimum:
 - a. Live loads supported
 - b. Joist sizes
 - c. Joist layout/spacing

- d. Intermediate girder size and location
 - e. Floor sheathing information (type, thickness)
- 3) Wood framed roof (conventional framing) plans and details must show at a minimum:
- a. Live load supported
 - b. Rafter sizes
 - c. Rafter layout/spacing
 - d. Roof sheathing information (type, thickness)
- a) Pre-engineered systems (manufactured trusses and wooden i-joists such as TJI[®] joists) need to include supporting structural members for pre-engineered systems. Support structure (including headers, beams, walls, and columns) shall be provided on a framing plan stamped by the engineer of record.

Option 1:

Plan Review: Provide framing plan showing truss/wooden i-joist layout (direction and spacing) sealed by engineer of record.

Field Inspections: Provide truss layout and truss calculations from the manufacturer stamped by an engineer.

Option 2:

Plan Review: Provide framing plan showing general area of truss/wooden i-joist floor system stamped by engineer of record and a coordinating truss layout (direction and spacing) from the manufacturer stamped by an engineer

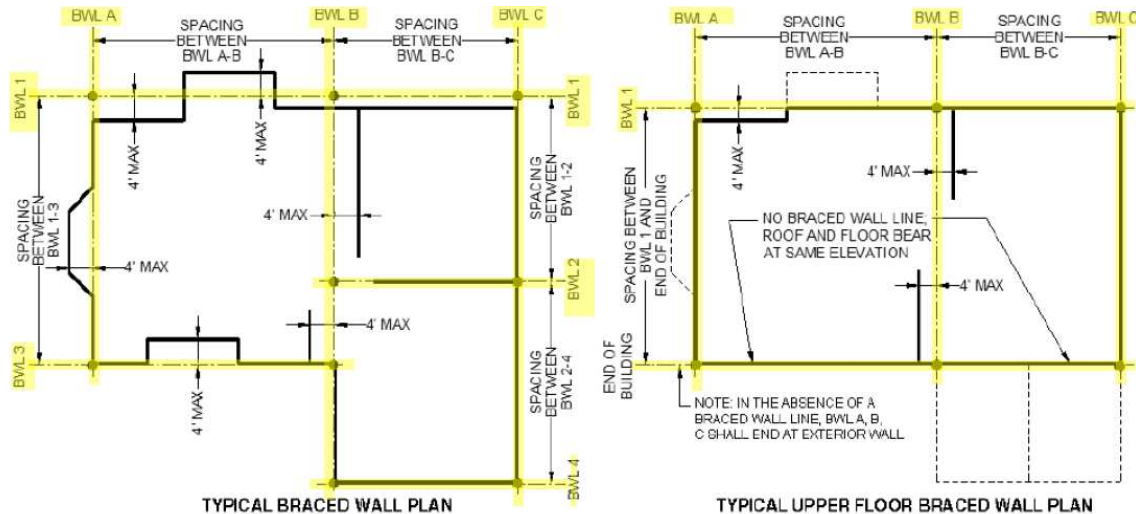
Field Inspections: Provide truss calculations from the manufacturer stamped by an engineer

4.4.4.3 Wall Bracing Requirements for Wood Construction:

Submit a separate braced wall plan showing compliance with the currently adopted IRC. The plan shall clearly indicate the following items:

- 1) Braced wall lines (Refer to Figure 1 for sample plan showing braced wall lines)
- 2) Braced wall methods used. Use bracing method abbreviations of the currently adopted IRC when prescriptive method used.
- 3) Braced wall panel locations (or contributing panels lengths for continuous sheathing methods)
- 4) Applicable details (drawing details, sheathing size, nail size, and nail pattern, hold downs, portal frame details, etc.)
- 5) General notes regarding continuous sheathing and general references to code sections will not be accepted, specific information must be provided.
- 6) The “Braced Wall Plan Calculation Template”
[\(http://www.austintexas.gov/sites/default/files/files/Planning/Applications_Fo](http://www.austintexas.gov/sites/default/files/files/Planning/Applications_Fo)

[rms/Braced Wall Plan Calculation Template_citylogo.pdf](#)) provides a wall bracing calculation aid based on the prescriptive requirements of the IRC. This document, completed by applicant, can help expedite technical review.



For SI: 1 foot = 304.8 mm.

Fig. 1 Braced Wall Lines (Source: IRC Fig. 602.10.1.1)

4.4.4.4 Engineered Design Requirements:

Engineering Design Drawings must be sealed by a Texas Registered Engineer for the following items:

- 1) Foundation Plans and details for private dwellings and accessory structures located on expansive soils
- 2) Unsupported spans greater than 24 feet
- 3) Pre-engineered systems or members

4.4.4.5 Sealed Framing and Wall Bracing Drawings Requirements:

Drawings must be sealed by a Texas Registered Engineer or a Texas Registered Architect for the following items:

- 1) Framing plans, wall bracing plans, and associated details for private dwellings and accessory structures that are more than one-story.
- 2) Framing plans, wall bracing plans, and associated details that do not fully meet the prescriptive requirements outlined by the currently adopted IRC.
- 3) Framing plans, wall bracing plans, and associated details designed to meet the currently adopted International Building Code or ASCE 7.
- 4) Decks over 4 feet from the top of the decking measured vertically or grade at any point within 36 inches horizontally.

4.4.4.6 Substitution of Structural Verification Report for Structural Drawings:

A completed “[Structural Verification Report](#)”

(http://www.austintexas.gov/sites/default/files/files/Planning/Applications_Forms/Structu

[ral Verification Report citylogo.pdf](#)) can be submitted in lieu of structural drawing requirements for the following conditions:

- 1) Conversion of a carport with an existing foundation, open on no more than 2 sides, to a single-story habitable space
- 2) Projects eligible for a Remodel/Repair permit where no additions to the building are proposed
- 3) Change of use with remodel work only where no additions to the building are proposed
- 4) Verification of existing foundations less than 10 years in age
- 5) Verification of existing framing and wall bracing for structures between 5 to 10 years of age
- 6) A verification report may be required by the reviewer if necessary for completing a review for technical code compliance.

4.4.4.7 Structural Verification Report Requirements:

Complete the [Structural Verification Report](#). (http://www.austintexas.gov/sites/default/files/files/Planning/Applications_Forms/Structural_Verification_Report_citylogo.pdf). The letter should include at the minimum:

- 1) Date of the site visit
- 2) Areas of the property observed
- 3) Detailed foundation and framing information of existing structure
- 4) Current condition of existing structure
- 5) Engineer's/Architect's opinion of the adequacy of the existing structure to support the anticipated loads
- 6) Engineer's/Architect's repair plan, if required, to bring the structure up to the adequacy required to support the anticipated loading

4.4.4.8 Work Exempt from Structural Drawing Requirements:

The following work is exempt from the structural drawing requirements. Structural verification will be performed in the field by the Building Inspector who may require additional drawings and/or verification by a Texas Registered Engineer or Texas Registered Architect.

- 1) Work listed in section R105.2 "Work exempt from permit" of the currently adopted IRC when included with a permit application for other work.
- 2) Verification of existing structures 10 years in age or more
- 3) Uncovered decks (including associated deck stairs, ramps, landings) less than 200 square feet and not more than 30 inches above grade at any point within 36 inches horizontally.
- 4) Uncovered deck (including associated deck stairs, ramps, landings) serving a door to a manufactured home where the deck is less than 200 square feet and not more than 48 inches above grade at any point within 36 inches horizontally.
- 5) Conversion of a garage with an existing foundation to a single-story habitable space.

Framing and wall bracing for detached single-story accessory structures used as garages, tool and storage sheds, playhouses and similar uses, provided the floor area does not exceed 500 square

feet, does not create a habitable space and contains no plumbing. A foundation plan and details must be submitted and shall meet the requirements of the Foundation Requirements section.

4.4.5 Subchapter F

4.4.5 Subchapter F Exhibits

4.4.5.1 Setback Plane Compliance Plans:

Additional components shown below are required to demonstrate compliance with Title 25-2 Subchapter F of the Austin City Code on any new construction or additions that exceed either 1 story or 20 feet in height. These may be added to the existing plan sheets or shown as separate exhibits. It is recommended that separate exhibits be presented to avoid confusion with other plan features. Topographic information must be provided by a Texas Registered Land Surveyor (RPLS). It is advised that the applicant request a planner consultation for non-rectangular lots prior to beginning significant design work.

1) Plot Plan:

- a. 1 foot contours extended to each property line
- b. Finished Floor Elevation expressed in decimal to nearest one-hundredth foot
- c. Building Line per Title 25-2 Subchapter F Article 3.2
- d. 40 foot tent intervals per Title 25-2 Subchapter F Article 2.6
- e. Spot elevations of highest elevation for the four corners of each tent interval
- f. Benchmark with relation to mean sea level

2) Sections (front views) and Elevations (side views):

- a. Provide separate section for each tent interval containing a structure that is more than one story or 20 feet in height
- b. Finished floor elevation
- c. Elevation of highest elevation for the four corners of each tent interval
- d. 15 foot setback plane from side property line
- e. 45 degree angle labeled for setback plane
- f. Label all encroachments into rear setback plane and cite applicable exception allowing structure to protrude through setback plane (see Title 25-2 Subchapter F Article 2.6)
- g. Top of plate for each story
- h. Depth of floor truss for each story

4.4.5.2 Attic Exemptions:

Sufficient exhibits must be submitted within the plan set demonstrating compliance with Board of Adjustment decisions and Title 25-2 Subchapter F. The following minimum items are required for review of exempted attics:

- 1) The building elevations must clearly depict (and label) the slope of the roof(s) for the habitable attic area along with depicting that acceptable construction for a habitable attic is being followed.
- 2) Provide a separate roof plan within your architectural plan set with all roof slopes identified (labeled) on it.
- 3) The floor plans and building elevations must depict that the habitable attic is contained within the roof structure and does not extend beyond the footprint of the floors below.
- 4) A separate floor plan and a section view of the habitable attic must be submitted depicting compliance with the Board of Adjustment interpretation from January 9, 2012 (C15-2011-0110) regarding: "As measured in accordance with Subsection 3.3.4, fifty-percent (50%) or more of the exempted portion of an attic must have a height of less than 7 feet, but more than 5 feet." Both exhibits (floor plan and section view) shall depict the attic areas that are: 1) less than 5 feet of ceiling height, 2) between 5 feet and just less than 7 feet of ceiling height, and 3) 7 feet and greater in the ceiling height. In addition, a tabular calculation based on the exhibits must be included demonstrating a valid ratio (expressed in sf or %) for a habitable attic exemption (i.e. the area with ceiling heights between 5' and less than 7' is greater than the area with ceiling heights 7' and greater).

4.4.5.3 Basement Exemptions:

Sufficient exhibits must be submitted within the plan set demonstrating compliance with Title 25-2 Subchapter F. The following minimum items are required for review of exempted basements:

- 1) Floor plans submitted must clearly depict that the basement is fully contained within the first story footprint and no portion of the basement extends beyond the first story footprint.
- 2) A separate exhibit must be submitted depicting that the finished floor of the first story is not more than three feet (36 inches) above the average elevation at the intersections of the minimum front yard setback line and the side property lines. The best way to depict this information is with a section view of the front building elevation with the side property lines at the minimum front yard setback line included in the section view. The exhibit will include: the two spot elevations (labeled with text) at the intersection of the minimum front yard setback line and side property lines, a line depicting the average (labeled with text) of the spot elevations, a line depicting the finished floor elevation (labeled with text) of the first story, and one dimensioned line (labeled with text) depicting compliance with the requirement that the finished floor of the first story is not more than three feet (36 inches) above the average elevation of the two spot elevations at the intersections of the minimum front yard setback line.
- 3) A separate exhibit(s) must be submitted depicting that the basement is surrounded by natural grade for at least 50% of its perimeter. The best way to depict this information is by unfolding the walls of the basement in elevation view(s) that depict the natural grade line and how much area of each wall is below the natural grade and how much area of each wall is above natural grade. In addition, a summary table or

tabular calculation based on the exhibits(s) must be included to demonstrate compliance with this requirement.

4.4.5.4 Sidewall Articulation:

A prescribed articulation is to be clearly dimensioned in the site plan, floor plans and the elevations. If a structure is exempt from providing a sidewall articulation, cite applicable exception (see Title 25-2 Subchapter F Article 2.7).

4.4.5.5 Carport Exception:

If utilizing a gross floor area exception under Title 25-2 Subchapter F Article 3.3.2.A.3 (parking area open on 2 or more sides), provide the following items to demonstrate compliance:

- 1) FFE (finished floor elevation) of carport is to be provided
- 2) Height of top plate from the carport FFE is to be provided. If there is no top plate, the underside of structural beam is to be measured.
- 3) Dimensions are to be provided in plan for the overall length of the carport wall and the opening in the carport wall.
- 4) 80% openness calculation is to be provided for each applicable elevation.
 - a. The overall area of the carport wall from the FFE to the u/s (underside) of the top plate is to be multiplied by the overall width of the carport wall.
 - b. The opening in the carport wall is to be calculated from the FFE of the carport to the u/s of the top plate multiplied by the width of the opening.
 - c. If an overhead garage door is present on a carport, adhere to BOA interpretation case C15-2015-0011. (See Section 4.4.5.2.4 for specifics).

4.4.5.6 Ceiling heights in excess of 15 feet:

Ceiling heights in excess of 15 feet must be counted twice per Title 25-2 Subchapter F Article 3.3.5. Provide sufficient information to demonstrate compliance. Ceiling heights should be shown on floor plans. Shade any areas in excess of 15 feet. Section drawings may also be used to show interior ceilings.

4.4.6 Structural Drawings/memorandum

4.4.6 Special Exhibits:

4.4.6.1 Lake Austin Zoning/ Lake Austin Overlay:

For projects within “LA” zoning districts or properties located within the “Lake Austin Overlay”, provide the following items to demonstrate compliance. These may be added to the existing plan sheets or shown as separate exhibits. It is recommended that separate exhibits be presented to avoid confusion with other plan features. Topographic information must be provided by a Texas Registered Professional Land Surveyor (RPLS).

- a. Name and date of plat recordation

- b. Gross site area
- c. Area within shoreline setback
- d. Net site area
- e. City limits line (if applicable)
- f. Dimension from shoreline to front lot line
- g. Overlay district line if applicable
- h. Label shoreline (492.8 MSL topographic contour)
- i. Shoreline setback including man-made inlets and boat slips
- j. Impervious Cover Chart
(http://www.austintexas.gov/sites/default/files/files/Planning/Applications_Forms/LA_slope_IC_calculations_citylogo.pdf) and slope map. (note: if all development is located within the lowest gradient category, a note may be provided on the plan set in lieu of chart and map)

4.4.6.2 Duplex Residential Use:

- 1) The common wall length requirement per LDC 25-2-773 shall be measured along the centerline of the wall. Only the length of the common wall adjacent to the dwelling units or a garage common wall can be used for compliance with common wall depth. This excludes dwelling unit exterior walls adjacent to or common to a covered patio, covered porch, etc.
- 2) In relation to LDC 25-2-555, gross floor area shall be calculated in accordance with LDC 25-1-21 #44.
- 3) Bedrooms should be counted in accordance with Board of Adjustment interpretation C15-2012-0044.
- 4) When compliance with 25-2-981 (B)(3) is required, a site plan exemption shall be submitted prior to permit application.

4.4.6.3 Landscape plan requirements per LDC 25-2-981 B (3):

- 1) Front Setback Averaging:
A project proposing to utilize setback averaging under Title 25-2 Subchapter F Article 2.3.B, must provide the following information with the plan set to demonstrate compliance.
 - For setback averaging applicant must provide a survey performed by Texas Registered Land Surveyor.
 - Survey must show the address and distance between the front lot line and the outer most exterior wall of the primary residence for each property used for averaging purposes.
- 4) Neighborhood Plans:
Front yard impervious coverage calculations are required when submitting an application for a new single family home or a duplex located in a neighborhood plan that has adopted this design tool. Provide the following information to demonstrate compliance:

(A) Total Area of the Front Yard	(B) Area of Impervious Coverage in Front Yard	Percent of Front Yard Impervious Coverage (B/A)

4.4.7.7 Visitability Submittal Requirements

4.4.7.7.1 Detailed Floor Plans:

Detailed Floor Plans or a separate Visitability plan sealed by a Certified Building Designer or a Texas-Registered Architect shall include the following demonstrating compliance with ordinance 20140130-021

(<http://www.cityofaustin.org/edims/document.cfm?id=205386>) and Building Criteria Manual Section 4.4.7 Visitability:

a. Visitable Entrance

- i. Identify location
- ii. Door size
- iii. Landing dimensions and slope
- iv. No-step threshold descriptive notes or drawing detail
 1. Alternate method of compliance: Approved threshold detail per Interpretation Number CI2013-0002. See Figure 12.
(http://www.austintexas.gov/sites/default/files/files/Planning/Code_Interpretations/NoStepThreshold-CI2013-0002.pdf):

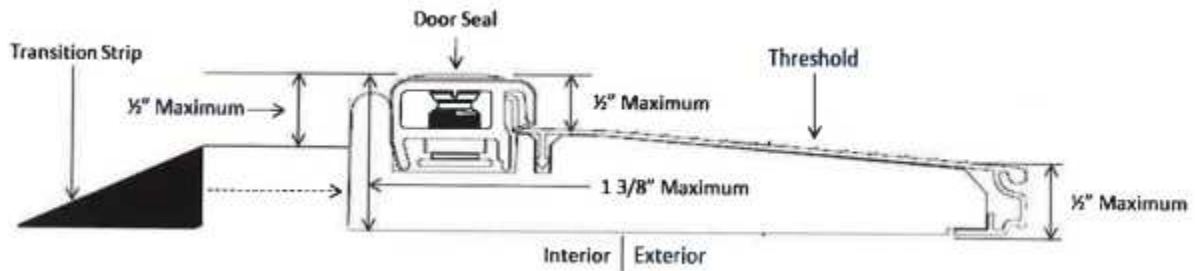


Fig. 12.

b. Visitable bathroom route

- i. Route shown by graphic representation such as arrows, lines, or shaded area. The route must also pass through the living room, dining room, and kitchen unless the exception under R320.5 is met.
- ii. Descriptive notes or details of thresholds or ramps along route
- iii. Dimension or label size of clear openings along route

c. Visitable bathroom

- i. Identify location
- ii. Door size
- iii. Blocking size, height, and location. General notes will satisfy this requirement.
- iv. Plumbing fixture clearances

d. Electrical, general notes will satisfy this requirement

- i. Light switches and environmental controls mounting height
 - ii. Outlets and receptacles mounting height
- e. Exterior Visitable Route
 - i. Route shown by graphic representation such as arrows, lines, or shaded area.
 - ii. Point of origin and entrance to structure.
 - iii. Landing locations, size, slope
 - iv. Route Slope
 - v. Ramp structural details and handrails where required
- f. If applicable: Waiver requests for Exterior Visitable Route
 - i. Survey performed by a Registered Professional Land Surveyor demonstrating lot exceeds ten-percent positive (10%) slope or if a switchback is required.
 - ii. Waivers for switchbacks shall demonstrate that the switchback is required.

It shall be the responsibility of the person(s) responsible for design and installation to exhaust all methods available to accomplish the required exterior visitable route.

4.5.0 ENGINEERING REQUIREMENTS

4.5.0 VOLUME BUILDER PROGRAM

4.5.1 Program Description:

The Volume Home Builder Program is an optional, expedited residential review process that enables volume builders to receive a faster turn around on residential permit applications for new construction. Builders wishing to participate must submit the required documentation, and then staff will review the submission for acceptance into the program. If accepted, the builder will be eligible to submit for residential building permits through the Volume Home Builder Program.

4.5.2 Applicability:

- a) The builder must be constructing on 20% or more of the lots within the same subdivision.
- b) The subdivision must have a minimum of 10 lots, with the exception of amended plats from an approved volume builder subdivision plat. Administrative waivers to these requirements will be considered on a case-by-case basis at the discretion of the Volume Builder Coordinator.

4.5.3 Submittal Requirements:

- a) Must sign the Home Builder Certification Affidavit for each subdivision the builder wishes to include in the program. This form must be notarized.
- b) Must submit a full copy of the final approved subdivision plat, including plat notes, along with all applicable floor plans, exterior options, and elevations on approved electronic format. Submissions in other formats will require individual approval.
- c) A scaled, hard-copy set of all floor plans and elevations of homes expected to be constructed by the builder in the subdivision.
- d) A scaled, copy of the recorded subdivision plat and all plat notes.

- e) Builder must schedule a meeting with the Volume Builder Coordinator to discuss the proposed development and applicable impacts from zoning requirements.
- f) Additional information as requested by the Volume Builder Coordinator. This could include copies of relevant ordinances, deed restrictions, and other materials as applicable.

4.5.4 Subdivision Requirements:

- a) Must not be subject to Subchapter F
- b) Proposed uses must be single-family residential use
- c) Lots must not require a variance or waiver to any zoning or criteria manual requirement
- d) All developable lots must front a paved street
- e) Must have access to water/wastewater service and may not have a septic connection
- f) Lots must not require a land status determination

4.5.5 Lot(s) will be reviewed for any other potential conflicts that may, at the discretion of staff, disqualify it from inclusion in the volume home builder program. Potential conflicts could include, though not limited to:

- a) Flag lots, corner lots, through lots, or other unusual lot configurations
- b) Specialized Zoning Designations (LA, DR, RR, PUD, MU, etc.)
- c) Airport or other conditional overlays
- d) Proximity to a floodplain, pipeline, or curb inlet
- e) Neighborhood Plan (NP) or Neighborhood Conservation Combining District (NCCD)
- f) National Registered Historic District (NRHD)

4.5.6 Preliminary Review

- a) Upon receiving the final subdivision plat, floor plans, elevations, and exterior options, the builder will meet with the Volume Builder Coordinator to identify any lots that, because of their complexity, do not qualify for the Volume Builder review process. Lots found to not be suitable for inclusion in the volume builder program should be submitted through the standard residential permitting process.
- b) For the remaining lots, the builder will submit for permit through the Volume Home Builder Program the required documentation. Building plans will not be required for each permit submittal.

4.5.7 Residential Review Permit Application Requirements

Once reviewed, the builder will be notified of both accepted and excluded lots. The Volume Builder Coordinator will supply a subdivision zoning review sheet to the builder. The builder is to review and sign this review sheet prior to the submission of any residential permit applications for the applicable subdivision. The builder must submit all residential permit application requirements to receive approval for a building permit.

4.5.8 On-Line Submittal Process:

Builder will log into the City database and create a Plan Review on-line. Builder will enter all applicable building data and other applicable information. Once entered, the builder will attach the following to the Plan Review folder:

- a) Completed Volume Builder Residential Permit Application
- b) Scaled plot plan on letter or legal size paper
- c) Approved Tree Ordinance Review Application (if applicable)
- d) SMART HOUSING certification letter (if applicable)
- e) Approved Electric Service Plan Application form

4.5.9 The plot plan shall include the following information:

- a) legal description of lot and assigned address
- b) stamp indicating plot plan is determining factor in COA review process
- c) plan number or identifying code for the proposed structure
- d) all property lines, setbacks, easements, and adjoining rights-of-way
- e) trees greater than 19" in diameter, 4' from the base
- f) proposed structures with roof overhangs shown (dashed)
- g) driveways, A/C pads, and other improvements
- h) city sidewalks (if applicable)
- i) curb inlets and manholes (if located on or within 10' of the property frontage)

4.5.10 Should the on-line submittal system not be available, 2 hard copies of the preceding items should be sent in to Residential Review for processing.

4.5.11 Participation in this program does not change the inspection process. Inspections should still be scheduled by calling the IVR system at (512) 480-0623. If you do not have an IVR PIN, please call 978-4000.

4.5.12 Payment of building fees is required prior to issuance of a building permit.

4.5.13 Once the permit is received, the permit and a stamped plot plan should be kept on the job site.

4.5.14 Inspectors will not accept flipped or mirrored construction plans in the field.

4.5.15 Should a previously permitted plan need a revision, the builder must sign in to see a residential reviewer and update the application as necessary, including updated plot plans, coverage information, or other applicable changes.

4.5.16 Model homes, construction trailers, and other non-residential uses should be submitted through the standard residential permitting process.

4.6.0 CODE VIOLATIONS

4.6.0 4.8.0 INSPECTIONS

This section provides inspection requirements for residential structures in the City limits and ETJ for compliance with the adopted Residential Code and the City Code.

This section applies to legal complying and legal non-complying structures, single-family and multi-family residences, townhouses, and does not address zoning.

Inspection flow charts are available on the City website below and provide a guide for the inspection process: <http://www.austintexas.gov/page/building-inspection-process-flowcharts>.

4.6.1 Residential Inspector Qualifications

4.6.1.1 Chief Residential Combination Inspector

The Chief Residential Combination Inspector is the Supervisor over Residential Combination Inspectors, and must:

- a. Be an employee of the City;
- b. Maintain a current plumbing inspector license issued by the Texas State Board of Plumbing Examiners;
- c. Maintain a current certification as a Residential Mechanical Inspector under the certification program established by the International Code Council or International Association of Plumbing and Mechanical Officials;
- d. Maintain a current certification as a Residential Energy Inspector under the certification program established by the International Code Council;
- e. Maintain a current certification as a Residential Building Inspector under the certification program established by the International Code Council;
- f. Have at least four years of inspection experience, at least one year of which must be in a responsible supervisory capacity.

4.6.1.2 Residential Combination Inspector

An inspector who performs inspections under the adopted Residential Code must meet the following qualifications.

- a. Be an employee of the City;
- b. maintain a current plumbing inspector license issued by the Texas State Board of Plumbing Examiners;
- c. Maintain a current certification as a Residential Mechanical Inspector under the certification program established by the International Code Council or the International Association of Plumbing and Mechanical Officials;
- d. Maintain a current certification as an Residential Energy Inspector under the certification program established by the International Code Council;
- e. Maintain a current certification as a Residential Building Inspector under the certification program established by the International Code Council.

A person hired by the City as a residential combination inspector must become a Licensed Plumbing Inspector by the Texas State Board of Plumbing Examiners within one year after the date of employment. All required certifications are to be obtained within a 2 year period after the Texas State Plumbing Inspectors license is obtained.

4.6.2 Residential Building Inspection

4.6.2.0 General

The Residential Inspection flow chart provides a summary of the inspection process for residential dwellings. It is available at the website below: <http://www.austintexas.gov/page/building-inspection-process-flowcharts>

For a full list of inspection codes, see Appendix A, Figure 1 or the *Inspection Request Brochure* at: <http://www.austintexas.gov/page/how-schedule-building-inspection>

4.6.2.1 Layout Inspection:

A Layout Inspection shall be made after the permanent footprint of the structure is established and foundation forms and/or piers have been erected and are in place. The Layout Inspection must be performed by a surveyor registered in the State of Texas. The surveyor will provide an as-built survey with all new and existing improvements, legal boundaries, easements, encroachments, lot size square footage and all required dimensions. Surveys taken from string lines or surveys of proposed structures will not be accepted.

- a) Special requirements: Building projects located in the area subjected to the Land Development Code, 25-2, Subchapter F (Residential Design & Compatibility Standards Area) or within the 100-year flood plain, may be required to provide additional elevation certification verifying compliance with approved plans and code requirements. The Building Official has the discretion to require additional surveys needed to ascertain compliance with the Code.
- b) Impervious coverage: An impervious cover survey will be required for any project within 5% of the maximum allowable impervious coverage.

4.6.2.2 Pre-Construction Inspection (Pre-Con):

A pre-construction inspection shall be required for any residential project with a non-complying or non-conforming structure, a special exception or any time City of Austin staff identifies an atypical situation that would merit a pre-construction inspection. If construction begins prior to the pre-con inspection, then the property owner risks losing the non-complying status for the property and a re-submittal may be required. Inspection staff will photo document all non-complying portions of the structure and attach them to the permit.

4.6.2.3 Foundation Inspection:

City Inspectors will not perform foundation inspections for new construction projects, additions or remodels. The Builder shall provide a report to the City that is prepared by a registered design professional verifying that the foundation has been constructed in accordance with the adopted Residential Code or an engineered design. A copy of this report shall be provided at the final building inspection.

4.6.2.4 Subterranean Termite Protection:

All additions and new construction projects must provide protection against subterranean termites in accordance with the adopted residential code. For all treatments, a third party termite report is required. A copy of this report shall be provided at the final building inspection. See Appendix A, Figures 2 and 3 for the forms. They are also available at the following websites:

HUD Form (HUD.gov) NPMA-99-B -

http://portal.hud.gov/hudportal/HUD?src=/program_offices/administration/hudclips/forms/npmaforms

Or

State of Texas Official Wood Destroying Insect Report -

<https://www.texasagriculture.gov/Portals/0/forms/PEST/Structural/Txwood%20destroying%20insect%20report.pdf>

- a) Chemical Termite Protection Treatments - A State of Texas Department of Agriculture approved termite report shall be provided by a State Licensed Structural Pest Control Applicator for all chemical treatments.
- b) Non-Chemical Termite Protection – A City of Austin, H.U.D. or State approved termite report shall be provided for all non-chemical treatments. All non-chemical treatments shall be applied in accordance with the adopted residential code and all manufacturers’ specifications. All termite treatment applicators must be certified or capable of demonstrating significant competency in the installation and application of non-chemical treatments.

4.6.2.5 Framing Inspection:

A Framing Inspection will be required for all new construction projects, additions, remodels, and modifications to any portion of the framing system or any time more than thirty-two (32) square feet of framing is exposed.

4.6.2.5.1 Framing Inspection Prerequisites:

- a) All trade work and Stage 1 Energy Code required sealing (Foam) must be completed prior to scheduling this inspection, and
- b) The electrical rough inspection must be approved or conducted with minimal violations prior to scheduling the Framing Inspection.

4.6.2.5.2 The Third Party Pre-Frame Inspection:

For all new construction projects or any time Building Inspection staff identifies unreasonably excessive amounts of deficiencies in additions and or remodel projects, a third party inspector will perform a Framing Pre-inspection using the City of Austin approved framing checklist. All trade work and stage 1 Energy Code required sealing (Foam) must be completed prior to conducting this inspection. All deficiencies identified by the third party inspector shall be corrected prior to scheduling the Framing Inspection. See Appendix A, Figure 4 for the Residential Framing Checklist. The form is also available online at:

http://www.austintexas.gov/sites/default/files/files/Planning/3rdParty_Preframe_Inspection_Checklist.pdf

4.6.2.5.3 Third party Inspector Qualifications:

Third party inspectors performing pre-frame inspections shall be a Certified ICC Residential Inspector or a registered design professional capable of demonstrating significant competency in the inspection of plumbing and mechanical systems.

4.6.2.5.4 Grouped Framing Inspection:

The framing inspection for new construction, unoccupied additions or unoccupied remodels where the scope of renovations exceeds 50% of the existing structure shall be scheduled and inspected as a grouped inspection with the plumbing and mechanical systems.

Alteration (as defined in the IRC Appendix J) is the reconfiguration of any space; the addition or elimination of any door or window; the reconfiguration or extension of any system; or the installation of any additional equipment.

4.6.2.6 Insulation Inspection:

An Insulation Inspection is required for all new construction projects, additions and any time any portion of existing insulation or the existing thermal envelope is modified. If a non-prescriptive insulation system is used, it must comply with the currently adopted Energy Conservation Code. Insulation shall not be installed until Framing Inspection is approved or insulation is authorized by Residential Inspectors.

4.6.2.7 Wallboard Inspection:

4.6.2.7.1 New Construction: For all new construction projects a Third Party Wallboard Inspection shall be required. If any portion of the wallboard installation is a component of a fire rated assembly, the Third Party Report must include what type of fire rated assembly was used, what testing method it complies with, and what materials it consists of. The Third Party Wallboard Inspection may only be conducted by an ICC Certified Residential Inspector or registered design professional. The Third Party Report is to be collected at the Final Building Inspection.

4.6.2.7.2 Remodels and additions: For all remodels, additions or any time more than 32 square feet of sheetrock is repaired, the Wallboard Inspection can be conducted by Residential Building Inspectors or comply with Section 4.6.2.7.1. Insulation shall not be installed until framing inspection is approved or insulation is authorized by Residential Building Inspectors.

4.6.2.8 Energy Final Inspection:

For all new construction projects or additions and remodels where the thermal envelope has been modified, an Energy Final Inspection is required. This inspection is scheduled with the Final Building grouped inspection.

- a) Thermal Envelope Leakage: A third party testing report will be provided by a City of Austin approved testing contractor for envelope leakage on all new construction projects. The report must illustrate compliance with the currently adopted Energy Conservation Code.
- b) Duct Leakage: A third party testing report will be provided by a City of Austin approved testing contractor for duct leakage on all new construction projects or anytime 100% of the duct work in the structure has been replaced.
- c) Ducts located entirely within the building envelope do not require a leakage test.

4.6.2.9 Final Building Inspection

- a) Grouped Final Building Inspection: The Final Building Inspection for new construction, large additions or remodels where the scope of the renovation exceeds 50% of the existing structure shall be scheduled and inspected as a grouped inspection. This includes all required trade inspections, including energy, mechanical and plumbing.
- b) Required documentation at the Building Final Inspection for new construction:
 - 1. Foundation Letter: See Section 4.6.2 Foundation Inspection;
 - 2. Subterranean Termite Protection Letter: See Section 4.6.2 Subterranean Termite Protection;
 - 3. Wallboard Letter: See 4.6.2 Wallboard Inspection;
 - 4. Energy Reports: See 4.6.2 Energy Finals;
 - 5. Impervious Coverage Survey (If Applicable) If the impervious coverage for any residential project is within 5% of the maximum amount allowed, then an impervious cover survey is required.

4.6.2.10 Certificate of Occupancy:

In order to attain a Certificate of Occupancy, Certificate of Compliance or to finalize any building permit issued in the City of Austin, a Final Building Inspection approval is required.

To request a Temporary Certificate of Occupancy, contact the Permit Center.

4.6.2.11 Continuance of Work Inspection:

A Continuance of Work Inspection may be scheduled by a property owner or authorized agent, and if approved will extend the permit expiration date 180 days. The Residential Inspector has the authority to approve or deny the Continuance of Work Inspection based on the progress of work.

Work shall be continuous construction as required by City approved plans, scope of the work as described in the permit, local code and ordinances;

- a) Driving of a nail and/or a wooden stake into the ground for the purpose of surveying land does not constitute work;

b) Work begins when active clearing of the land to proceed with the approved construction starts, such as, piers are drilled for pier and beam construction and batter boards have been set for slab on grade construction;

4.6.2.12 Third Party Inspections:

Third Party reports and surveys may be required or requested by the City including:

- Building height survey
- Energy test report
- Envelope survey
- Finished floor elevation survey
- Flood elevation certificate
- Form survey
- Foundation report
- Impervious coverage survey
- Lot square footage survey
- Structural repair report
- Termite treatment report
- Wall bracing report
- Wallboard report
- Weather seal report for stucco finish

4.6.3 Residential Plumbing Inspections

All residential plumbing inspections shall be prepared and scheduled in accordance with the adopted Plumbing Code.

Water and Sewer Lines inspections: These “outside the structure” inspections may be scheduled any time with or after the Plumbing Rough, but must be complete before Final Inspection.

4.6.3.1 Plumbing Rough Inspection

A plumbing rough inspection is required for all plumbing permits when work is done to drain, waste and vent lines (DWV) below the first floor level. All DWV lines must be plainly visible and accessible for inspection.

- a) For tunnel jobs under foundations or jobs where access cannot be reasonably provided for Building Inspection staff, then Building Inspection staff may accept photos in lieu of a visual inspection;
- b) The Builder (permittee) may proceed with work up to the Plumbing Rough state, at his own risk, while submitted plans are pending permit issuance.

4.6.3.2 Copper Inspection (Plumbing Pre-pour): A copper inspection is required prior to the placement of concrete for any new monolithic or addition foundations. All re-bar or post tension cables shall be complete. All trenches and excavations shall be complete and pads must be covered with approved material.

- a) For all copper inspections, all water distribution lines and all drain, waste and vent lines in the foundation shall be tested in accordance with the currently adopted Plumbing Code.

4.6.3.3 Topout inspection

A plumbing topout inspection is required for all plumbing permits when work is done to drain, waste and vent lines (DWV) or to the water distribution system above the first floor level.

Exception: plumbing permits where the scope of work is limited to areas that are exposed and accessible for inspection.

4.6.3.4 Showers Receptors & Compartments

Shower receptors shall be installed in accordance with the adopted plumbing code. Showers that are provided with a built in place, permanent seat or seating area that is located within the shower enclosure, shall first be lined with sheet plastic, lead, copper or other durable and watertight materials that extend above the horizontal surface of the seat or the seating area no less than the minimum requirement established by the adopted plumbing code.

4.6.3.5 Swimming Pools

Swimming pools shall require a plumbing permit, when equipped with any type of gas heating apparatus or any type of pool filling device connected to the potable water distribution system.

Exception: pools that are filled exclusively through exterior hose bibbs equipped with approved atmospheric type vacuum breakers or an approved permanently attached hose connection vacuum breaker.

4.6.4 Residential Certificate of Occupancy

4.6.4.1 Residential Certificate of Occupancy:

A certificate of occupancy may be issued when a “dwelling” project has passed all of the required inspections. Contact Building Inspection staff by email or phone.

4.6.4.2 Residential Temporary Certificate of Occupancy:

A temporary certificate of occupancy can be requested by the permit holder. The request must be submitted in writing to the Residential Inspection Supervisor, Program Manager or Division Manager of Building Inspections.

4.6.4.2.1 TCO Pre-requisites:

- a) The TCO inspection can only be scheduled when all required trade inspections (Mechanical, electrical and plumbing) are completed.
- b) All one-time inspections must be approved or receive a temporary approval. The One-time inspections includes but is not limited to:
 - a. Tree Inspection
 - b. Environmental Inspection

c. Driveway and Sidewalk Inspection

4.6.4.3 Residential Certificate of Compliance: A certificate of compliance may be issued for residential structures not for occupancy including a pool, deck, accessory structure, etc.

4.6.5 Residential Change Out Program for the Replacement of HVAC Systems, Water Heaters and Retrofit Window change outs.

The Application is online at:

<http://www.austintexas.gov/page/building-applications#com>

4.6.5.1 General

1. This section implements Section R109.11 (Residential Change Out Program) of the Residential Code and R324 (Retrofit Windows) of the Residential Code, Section 80.19(I) (Residential Change Out Inspections Program) of the Electrical Code, and Section 103.1.7 (Residential Change Out Inspections Program) of the Plumbing Code.
This section applies only to occupied one- and two- family dwellings for the replacement of heating, ventilation and air conditioning (HVAC) systems, water heaters, and retrofit windows.
3. The City will inspect one out of every five permits per contractor secured under this program for electric-only HVAC and water heater replacements. A “Residential Change Out Completeness Form” must be submitted for work completed under this program for which an inspection is not performed. The completed form will allow the City to complete the permit process and final the permit.
4. All gas systems will require inspection.
5. All window change outs will require inspection.
6. Work performed under this section may only involve work that requires a permit for building, electrical, plumbing or mechanical work that relates to equipment or window change out.
7. In this section the “responsible contractor”:
 - a. For a HVAC replacement, is the licensed mechanical contractor.
 - b. For a water heater replacement, is the licensed plumbing contractor.
 - c. For Retrofit windows, is the general contractor.
8. No work is allowed that involves circuits larger than 50 amps.
9. Fees owed to the City of Austin must be paid.

4.6.5.2 Application for Permit

1. The responsible contractor must apply for a permit using the Residential Change Out Application.
2. Except as provided in Subsection 3 of this section, an application must be submitted and approved before work is performed. Incomplete applications will not be processed.
3. If the responsible contractor performs emergency replacement work under this program after regular City Permit Office business hours, the responsible contractor must submit an application for the permit not later than three business days after the work is performed.

4. A permit fee established under separate ordinance will be charged.
5. Permits issued under this program will expire 180 days after issuance. It is the permit holder's responsibility to maintain the permit in active status.
6. No refunds will be issued under this program.

4.6.5.3 Scheduling Inspections

1. All fees are to be paid in full prior to scheduling inspections.
2. One out of every five electric-only HVAC or water heater permits secured under this program will receive a City inspection.
3. All change outs involving a gas system or window retrofit under this program will require inspection.
4. City Building Inspection Staff will contact the responsible contractor which permit has been selected for an inspection for electric-only units when the completeness form is used.

4.6.5.4 Routing of Inspections

1. The responsible contractor will coordinate with the homeowner for inspection access.
2. The Inspector will leave the inspection site 15 minutes after the scheduled time for the inspection, if the responsible contractor is unable to provide access for the inspection.

4.6.5.5 Contractor Responsibility

1. The responsible contractor must ensure access to the inspection site and equipment for inspection. The responsible contractor or a representative of the homeowner who is 18 years old or older must be present for the inspection.
2. The responsible contractor shall submit a completed "Replacement Change Out Completeness Form" to the City within five days of equipment installation for work completed under this section for which no inspections are performed by a City Inspector attesting that the work performed meets all Code requirements. The responsible contractor shall submit the form to the address shown in this section.
3. The responsible contractor is responsible for ensuring that all associated permits are secured and that all fees are paid in full before inspections can be scheduled.
4. The City of Austin will accept the "Replacement Change Out Completeness Form" by either method of delivery listed below:
 - a) Electronic mail to: building.inspections@austintexas.gov
 - b) Mail or Hand Delivery to:
 - City of Austin, Building Inspections
 - 505 Barton Springs Road, Suite 300
 - Austin, Texas 78704

4.6.5.6 Violations under this Program

1. The following actions are violations of the Residential Change Out Program:
 - a. failing to pay all required fees for permits and prior to scheduling inspections;
 - b. submitting the "Replacement Change Out Completeness Form" with incomplete information;

- c. falsely securing a permit under this program;
 - d. allowing the permit to expire;
 - e. failing to submit an application for a permit within three business days after the work was performed and after regular City Permit Office business hours; and
 - f. failing to provide access to the equipment for inspection.
- 2. A contractor cited for three violations of the Residential Change Out Program within a 12-month period may not participate in the program for one year. The yearly cycle will be determined by the date of the first offense in a twelve month period under this section.
 - 3. A contractor will not be granted a new permit if the contractor has unpaid fees.
 - 4. If a contractor commits a violation identified in Subsection 4.6.5.6 (1a-1c) of this section, the contractor will be required to follow the standard permitting and inspection process for the work.