

RESIDENTIAL PLAN REQUIREMENTS

Complete set of plans in duplicate: A complete set of comprehensive construction drawings (plans) must meet the following requirements or show the items listed below.

- Minimum scale of 1/8 inch = 1 foot for plan and elevations and 3/4 inch = 1 foot for details. All dimensions must be shown.
- Minimum sheet size is 8-1/2 x 11 inches. Maximum size is 2x3 feet.
- Name, address and occupation of plan preparer.
- Two copies of your site or plot plan.
- Foundation plan, indicating all continuous and isolated footings fully dimensioned.
- Floor plans, indicating all rooms, halls and building elements including ceiling heights, door sizes, and window sizes. Show all header sizes for openings. Indicate all interior bearing walls in this plan.
- Building elevations indicating siding, guards, stairs, windows and roofing material and slope. Show building and story heights.
- Provide floor joist layout indicating type, species, spacing and sizes of joist in scale. Show all girder sizes and locations on the plans. Show all point loads on the plan. Indicate double or triple joist locations under non-bearing or bearing interior walls. If floor trusses are going to be used, in addition to the floor joist layout, provide a floor truss or engineered lumber layout. Provide individual engineered lumber load calculations. Individual metal plate floor truss drawings must be signed and sealed from a VA engineer. This plan must indicate all girder locations and sizes. This plan must be to scale and dimensioned.
- Roof framing plan fully dimensioned indicating the span, size, and spacing of the rafters. All hip and valley rafter framing required supports to a bearing wall or girder must be shown. Rafter ties and collar ties must be shown on the plan.
- Metal plate wood truss layout plan fully dimensioned. Provide individual truss engineering sheets for each truss signed and sealed by a Virginia engineer. All wood truss plans must be fully dimensioned.
- Wall bracing plan indicating braced wall lines and the location of the braced wall panels.
- List the square footage of the structure on the plans.
- List the 2009 Virginia Residential Code as the building code.
- Design load criteria: Roof live load 20 pounds per square foot (PSF): Roof dead load 10 PSF for metal or shingles. Ceiling loads; Limited storage live loads 20PSF, full stairs to attic, 30PSF live load 10PSF dead load. Floor Load criteria; sleeping rooms 30PSF live Load, Living areas and wood decks 40PSF live load, dead loads 10 to 15 PSF.
- Wind Load criteria; 100MPH 3 sec gust

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- Wind load exposure; Urban areas exposure "B". Open areas with few obstructions the size of a house within 1500 feet is an exposure "C".
- Design loads for Windows and Doors; Exposure "B" +15.3. – 16.8 PSF; Exposure "C" +25.2 +27.3 PSF; Loads might be slightly different depending on roof height and size and location of windows and doors on the building.
- Additions in a flood zone must list the proposed finish floor height on the floor plans and must be at or above the design flood elevation, which is the base floor elevation and the freeboard.
- Distance separation from the property line for the addition must be at least 5 feet or fire ratings are required.
- Noise testing is required when habitable areas are added to a dwelling located in the Fentress airport noise zone. Check with the City's Zoning Division to verify if your location is in this zone. All walls and ceiling crawls must have an STC rating of 51.
- Prior to approval of the permit, Health Department approval is required for homes on septic and well systems. You can contact the Health Department located at 748 Battlefield Blvd. 23320 **(757) 382-8600 Fax No. (757) 382-547-0298**
- Provide an exterior wall section, $\frac{3}{4}$ =1 foot scale, showing the footing masonry foundation wall, anchorage, sill plates, crawl grade and exterior grade, crawl moisture barrier, crawl height to floor joist, floor joist, band board, floor sheathing, wall studs and spacing, wall sheathing, moisture barrier, siding, insulation, top plates, rafter or truss anchorage, soffit venting, ceiling joist, rafters or trusses, roof sheathing, moisture barrier, roofing, roof slope, rafter and collar ties.
- Stair Section showing the dimensions of the rise, run, nosing, handrail, picket spacing and ceiling height clearance.
- Corner framing detail indicating the top view of an inside and outside corner. Show the location of the nailing and spacing of the nails as required per the building code.
- List of material specifications including but not limited to grade and species of lumber, concrete strengths, and rebar sizes.
- Provide a detail of the any portal frames that are going to be used for wall bracing.
- Provide a rafter or wood truss wall bracing blocking at the top plate detail where the wall bracing is located.
- Indicate all critical point loads on the plans and provide adequate support and bearing to the foundation.
- Foundation plan indicating a continuous concrete footing around the perimeter except, for the discontinuous edges. Plan must show the width, thickness and the bottom of footing must be 12 inches below grade .

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- Footing details. Minimum thickness is 6 inches but 8 inches is the most common depth of the concrete footing.
- Foundation vents, crawl space access, and flood vents if applicable are required.
- Floor joist plan indicating, floor joist spans, girder spans, band beam, floor sheathing and insulation must be shown if installed. Minimum bearing of wood on wood or steel is 1-1/2 inches. Wood on masonry is 3 inches. Show connections.
- Exterior wall section showing size and spacing of studs, sill plate and anchorage, double top plate, sheathing, insulation R13 minimum (if making room living space), weather barrier and siding or masonry.
- Wall bracing plan; Show locations of wall bracing panels, methods, and any special design requirements.
- Floor plan fully dimensioned and rooms labeled.
- Interior walls and interior bearing walls must be identified on the plans. Interior bearing walls must be built and fire-blocked and draft-stopped like exterior walls. All bearing walls must be protected with a minimum of 1/2 gypsum board on the inside face.
- Ceilings must be insulated above roofed habitable areas to R38 minimum.
- All exterior windows, doors and garage doors must be dimensioned and designed to meet the 100 mph wind loads in exposure B or C. Provide a 2 copies of the 100 mph garage door product approval engineering drawings. If heated and cooled all windows and door must have a U factor of 0.35 or less.
- Garages in flood zones require flood vents located in at least two different exterior walls regardless of the elevation.
- Noise testing is required when habitable areas are added to a dwelling located in the Fentress airport noise zone. Check with the City's Zoning Division to verify if your location is in this zone.
- Carbon monoxide detectors are required to be installed outside of sleeping rooms for attached garage additions and in detached garages with habitable space above.
- Heating /cooling load calculations are required for any new or altered HVAC systems.
- Buildings located in a flood zone will require a new flood elevation certificate from a licensed certified land surveyor or engineer before final inspection for the attached and detached garages.