

RESIDENTIAL PLAN REVIEW CHECKLIST
FREDERICK COUNTY DEPARTMENT OF PERMITS AND INSPECTIONS
30 NORTH MARKET ST., FREDERICK, MARYLAND 21701 (301-600-3353)

Application No: _____

Date: _____

To: _____ (Applicant)

Plan Reviewer: _____

The plans submitted for the above referenced project have been reviewed for compliance with the Frederick County Building Code. The following marked (✓) items are noted as non-complying or are not found within the plans and are pointed out for your information.

NOTE: STUDY THIS CAREFULLY. FAILURE TO COMPLY WITH THE BUILDING CODE WILL RESULT IN A NOTICE OF VIOLATION. THE FOLLOWING EXCERPTS DO NOT ENCOMPASS THE ENTIRE BUILDING CODE OF FREDERICK COUNTY, BUT ARE PROVIDED ONLY AS A SYNOPSIS OF CODE REQUIRMENTS FOR RESIDENTIAL CONSTRUCTION. APPROVED PLANS MUST BE MAINTAINED AT JOB SITE.

Synopsis from International Residential Code 2015

Code Section Design Criteria

Comment Number

CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

GRND SNOW LOAD	WIND DESIGN		Seismic Design Category	Subject to Damage From			Winter Design Temp	Ice Barrier Underlayment Required	Flood Hazards	Air Freezing Index	Mean Annual Temp	Radon Protection Required
	Speed (mph)	Topographic effects		Weathering	Frost line depth	Termite						
30 psf	115	NO	B	SEVERE	30"	YES	12° F	YES	PLANNING AND ZONING	<1,500	52° F	YES

1. _____

Footing R403

- 2a. _____ Footing shall bear on undisturbed soil and below frost line (min. 30" from finish grade to bottom).
 b. _____ Min. continuous footing size is: **Depth: 6"** **Width:** foundation wall thickness + 2" each side.
 c. _____ Min. masonry chimney footing size is: **Depth: 12"** **Width & Length:** W & L Masonry + 6" all sides.
 d. _____ Min. column or pier footing size (for normal residential loading and assumed 2,000 PSF soil bearing capacity unless otherwise determined by calculation) is 24"x24"x12" thick for one story; and 30"x30"x15" for two story.

Foundation R404.1.6, R401.3

- 3a. _____ Foundation walls shall extend at least 6" above finished grade at all points; 4" above for masonry veneer.
 b. _____ Lots shall be graded so as to drain surface water away from foundation walls. The grade away from foundation walls shall fall a minimum of 6" within the first 10'. For surface drainage requirements see 'Standard Stormwater Management Plan' information package from Planning & Development Review - Engineering Dept. – 301- 600-1138.

Foundation R405, 405.1 & Plbg. Code 1111.1 R310.2.2

- 4a. _____ Drains shall be provided around all concrete, masonry, and precast foundations that retain earth and enclose habitable or usable spaces located below grade, including cellars and crawl spaces where interior grade is lower than exterior.
 b. _____ Minimum 4" diameter drain pipe or approved alternative method.
 c. _____ Minimum 2" gravel under drain tile and 6" gravel cover.
 d. _____ Topped with a filter membrane material or install drain tile sock.
 e. _____ Discharge to gravity outfall. Where not possible discharge to sump pit with pump or french drain.
 f. _____ Egress window wells shall be designed for proper drainage to the building's foundation drainage system.

Dampproofing R406.1

- 5a. _____ On poured concrete and precast exterior foundation walls enclosing habitable or usable space provide an approved coating per R406.1 from footing to finish grade.
 b. _____ On exterior foundation walls of masonry units enclosing habitable or usable space provide 3/8" portland cement parging (coved at footing) to finish grade plus dampproofing per above.
 c. _____ For alternate systems provide documentation and/or literature for the proposed waterproofing/dampproofing method.

Backfill Placement R404.1.7

6. _____ Backfill shall not be placed against the wall until the foundation has sufficient strength and has been anchored to the floor framing above or has been adequately braced to prevent damage by the backfill. Fill all areas simultaneously to provide for an even distribution of ground pressure.

Radon Appendix "F"

7. _____ Radon mitigation per Appendix "F". Vent pipe must extend vertically straight through the roof from the sub-slab with 45 degree elbows allowed to bend around obstacles.

Concrete Floor Slabs R506

- 8a. _____ Interior concrete floor slabs: minimum 3½" thick.
 b. _____ Prepared subgrade to be compacted with no vegetation, topsoil, or foreign materials.
 c. _____ Min. 4" thick base course consisting of clean graded sand, gravel, or crushed stone.
 d. _____ Vapor barrier: 6 mil polyethylene or approved vapor retarder with lapped joints not less than 6".
 e. _____ Max. fill beneath a concrete floor slab must not exceed 8" of earth or 24" of gravel; if exceeded the following apply:
 f. _____ Mechanically compacted fill must be verified by a Geotechnical Engineer or the slab shall be designed to be self-supporting and certified by a registered Architect or Engineer.

Recommendations: Control joints - no expanse to exceed 30 lin. ft. Provide 6"x6" 10 gauge welded wire mesh at mid-depth of slab or use fiber-mesh concrete additive.

Garage Slab R309.1	9._____	The floor area used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids toward the main vehicle entry doorway. Floor drains are not recommended – requires oil separators and sand traps. Asphalt shall not be allowed for garage flooring.
Decay and Termite Protection R317 R318	10. a._____ b._____ c._____	Use decay-resistant or treated wood for the following conditions: Sills unless located a min. of 8" above the ground. Wood on concrete slabs which are in direct contact with earth and less than 8" from the exposed ground. Wood joists when closer than 18" or wood girders when closer than 12" to exposed ground. Beams pocketed in exterior masonry or concrete walls need a min 1/2" clearance on tops, sides, and ends.
Crawl Space R408	11a._____ b._____ c._____	Min. 16" x 24" access panel (18"x24" min. if through a floor). Must have an air-tight seal to living space. Ventilation for unconditioned crawl space: Min.1 sq. foot for every 150 sq. foot under floor area. One vent within 3' of each corner and/or opposite sides to provide cross-ventilation. If a vapor barrier is installed, minimum ventilation can be reduced to 1/1500. (Min. 2 vents required) The under floor grade shall be cleaned of all vegetation and organic material.
Wood Floor Framing R502.1 R507	12a._____ b._____	All load-bearing dimensional lumber for joists, beams and girders (including plywood and particleboard) shall conform to applicable standards or grading rules and shall be identified by the grade mark or certificate of inspection issued by an approved agency. The grade mark or certificate shall provide adequate information to determine the "Fb" and "E" values. For all exterior decks refer to the 'Deck Information Guide'.
Anchorage R403.1.6	13._____	1/2" diameter anchor bolts shall extend a minimum 7" into concrete or masonry walls and spaced at a maximum of 6' o.c. and a maximum 12" from sill plate ends with a minimum of 2 bolts per member located in middle third of plate width. (Straps should be installed 4' o.c. max. or per manufacturer's instructions.)
Wall Bracing R602.10	14._____	All exterior walls must be braced to resist lateral loads per the provisions of Section R602.10 or 602.12 for simplified wall bracing requirements. (See wall bracing handout.)
Room Sizes R304 Ceiling Height R305	15a._____ b._____	Required areas: habitable rooms at least 70 sq. ft. (Habitable rooms, except kitchens shall not be less than 7' in any horizontal dimension.) Habitable rooms, hallways, corridors, and basements shall have a ceiling height of not less than 7'; bathrooms, toilet rooms and laundry rooms a minimum of 6'-8" measured from the finish floor to the lowest projection from the ceiling. EXCEPTION: Beams, girders, ducts, or other obstructions may not project to within 6' - 4" of the finished floor. EXCEPTION: Not more than 50% of the required floor area of a room or space is permitted to have a sloped ceiling less than 7' in height with no portion of the required floor area less than 5' in height. (Spaces with ceiling heights of min. 7' or above are considered habitable .)
Landings R311.3	16a._____ b._____	Every landing shall have a minimum dimension of 36" measured in the direction of travel. The width of each landing shall not be less than the door served. A landing shall be required on each side of an exterior door. The landing at the exterior side shall not be more than 7 3/4" below the top of the threshold. Max threshold height is 1 1/2". There shall be a floor or landing at the top and bottom of each stairway. (Certain exceptions may apply.)
Stairs, Guards, and Railings R311.7 R303.7 R303.8 R312.1	17a._____ b._____ c._____ d._____ e._____ f._____ g._____ h._____	Min. stair width is 3' at all points above the handrail and below the required headroom height. Min. headroom is 6'-8" vertically at all points. Min. tread depth is 10" horizontally from the leading edge to leading edge. (Nosing not required if tread is min. 11"). Max. riser height is 7 3/4". Max. riser opening is 4" when more than 30" above floor or walking surface. The greatest riser height/tread depth variation within any flight of stairs shall not exceed the smallest height/depth by more than 3/8" (Dimensions cannot exceed min./max. of "17c." and "17d." above). Excludes carpeting, rugs, or runners. All interior stairways shall be provided with a means to illuminate landings and treads. Exterior stairways shall be provided with a means to illuminate at the top of the landing. Exterior stairways to basements require a means to illuminate at the bottom of the landing. Handrail requirements: 1. One side of stairway with four or more risers continuous for full length (right side descending recommended). 2. Graspable per Section R311.7.8.3. 3. Between 34" - 38" above nosing. Projecting from wall min. 1 1/2" to inner edge and max. 4 1/2" to outer edge. 4. Ends shall be returned to wall or shall terminate in newel posts or safety terminals. Guardrail: Open side(s) of stair shall have a guardrail not less than 34" in height measured above tread nosing. Balusters/pickets, intermediate rails, and ornamental closures shall be installed so as not to allow the passage of a sphere 4" or more in diameter on level surfaces, and no more than a 4 3/8" sphere along a run of stairs.
Ramps R311.8	i._____ j._____	Porches, balconies, decks, and other raised surfaces located more than 30" above the floor or grade below (measured 36" horizontally from the edge of the open side), shall have guardrails not less than 36" high subdivided per (17h.) above. Ramps serving the egress door shall have a slope of not more than 1 unit vertical in 12 units horizontal. All other ramps shall have a maximum slope of 1 unit vertical in 8 units horizontal.

- Fireplaces and Chimneys**
Chapter 10
- 18a._____ If masonry fireplace opening is less than 6 sq. ft., minimum hearth projection is 16" front and 8" each side; if 6 sq. ft. or more, projection minimum is 20" front and 12" each side. (Does not apply to factory-built fireplaces.)
- b._____ Interior chimneys: Min. 2" clearance to combustibles; Exterior chimneys: Min. 1" clearance.
- c._____ Chimneys shall extend at least 3' above the highest point where they pass the roof of a building and at least 2' higher than any portion of the building within 10'.
- d._____ Chimneys shall not support loads other than their own weight unless they are designed and constructed to support the additional loads.
- e._____ Factory-built fireplaces/stoves shall be listed and labeled by a nationally recognized testing agency and installed in accordance with manufacturer's requirements. **Note:** In any new construction a fireplace/stove must be installed prior to final inspection —or—a separate permit with inspections shall be required.
- Glazing**
R308
- 19._____ Safety glazing is required in the following areas: all glass doors, side lights, and windows to a height of 60" within 24" of a door frame, areas around showers, tubs, spas/pools, stair landings, railing/guardrails, and walking surfaces. Windows having a sill height of less than 18" to the floor **AND** greater than 9 sq. ft. in glazing area will require safety glazing. For further information see Section R308. **Note:** Laminated plastic glazing and safety film do not pass for safety glazing unless further documentation is provided and approved by Frederick County.
- Insulation**
20. Provide Performance Based Energy Efficiency Compliance calculations for local area or use the following prescriptive R-values.
- IECC
- a._____ Roof/ceiling assemblies shall have a minimum value of R-49 with baffles as needed/R-38 if uncompressed.
- b._____ Exterior walls shall have a minimum value of R-20 or R-13 batts + R-5 continuous for their full height.
- c._____ Floors over unheated spaces and stairwells shall have a minimum value of R-19.
- d._____ Floors over exterior spaces (cantilevered areas) shall have joist cavities filled with a minimum R-30 value.
- R316.3
- e._____ All exposed insulation materials shall have a flame-spread index not to exceed 75 with accompanying smoke-development factor not to exceed 450. (Use foil-faced or similar when exposed.)
- f._____ The perimeter of "slab on grade" floors of habitable space shall be insulated with a rigid material, extending 24" vertically, horizontally or any combination beneath the slab/foundation wall, having a minimum value of R-10.
- g._____ Basement walls enclosing conditioned space require either R-10 continuous or R-13 within the framing cavities.
- h._____ 'Blower Door Test' by certified 3rd Party. (Mandatory)
- i._____ 'Duct Blaster Test' by certified 3rd Party. (If applicable)
- Egress**
R310
R311
R312.2
- 21a._____ At least one side-hinged door a min. of 3' W. x 6'-8" H. (32" x 78" clear opening) leading to the public way. Max threshold height 1 ½".
- b._____ Minimum hall width is 3'.
- c._____ Every sleeping room shall have an exterior door or an emergency egress window. Egress window requirements: -Net clear opening of 5.7 sq. ft.(5.0 sq. ft. if a grade floor window). -Min. net clear opening height of 24". -Min. net clear opening width of 20". -Max. height of 44" from finished floor to bottom of clear opening.
- d._____ Min. 24" window sill height where exterior sill height is more than 6' above grade or surface below. Windows less than 24" with stopping devices at 4" max. opening will be allowed **ONLY** if they comply with ASTM F 2090.
- e._____ All new basements with ceiling heights of 7' or greater shall have at least one operable emergency egress window or exterior door. If window wells are required they too must meet egress requirements (3'x3' min. horizontal area).
- f._____ If an existing basement is being finished without a means of egress to the outside then the enclosed accessible space under the stair is required to have the walls and ceilings protected with ½" gypsum board.
- g._____ Habitable attics require at least one (1) operable emergency escape and rescue opening.
- Attic Access**
R807
- 22a._____ A readily accessible access opening not less than 22" x 30" with 30" head height clearance shall be provided to any attic area or other location having a clear height of 30" or more. Closets (except walk-in) are not considered readily accessible.
- b._____ Provide a light in the attic within the vicinity of the access panel.
- c._____ In all new construction if air handler units, water heaters, or other serviceable equipment are installed within the attic, access must be provided by permanent or pull down stairs.
- Roof Assemblies**
R903
R905
R905.1.2
- 23a._____ Drip edge required along all eave and rake roof edges.
- b._____ Ice barrier membrane minimum 2' along all eaves and valleys. Recommended on entire roof with less than 4/12 pitch.
- c._____ Gutters and downspouts are required unless an alternative system is submitted to and approved by Frederick County.
- d._____ Roofs with asphalt shingles having roof pitches between 2/12 to 4/12 require double underlayment or ice barrier.

<p>Exterior Covering R703.2 & Table 703.3(1) Flashing R703.4, & EIFS R703.9</p>	<p>24a._____ The exterior wall envelope shall be designed and constructed in such a manner as to prevent the accumulation of water within the wall assembly by providing a water-resistive barrier behind the exterior finish as required by Section R703.2. (House wrap or similar is required.)</p> <p>b._____ Approved corrosion-resistant flashings shall be installed at all of the following locations: Door and window openings, intersection of chimneys, under and at ends of masonry, wood, or metal copings and sills, above all projecting wood trim, intersection of porches, decks, stairs to wood frame construction, wall and roof intersections, and built-in gutters.</p> <p>c._____ All Exterior Insulation Finish Systems (EIFS) shall be installed in accordance with the manufacturer's installation instructions. EIFS over wood framing shall provide for drainage.</p>
<p>Masonry Veneer Tbl. R703.8(1) R703.8</p>	<p>25a._____ Weather resistive barrier (15# building paper or equal) is required to cover all exposed wood and 6" strips to cover open joints of water repellent sheathing material when a 1" air space is provided.</p> <p>b._____ Attach to wood frame w/approved metal ties @ 32" max. horizontally and 24" max. vertically and shall not support more than 2.67 sq. ft. of wall area with a minimum 1" air space to wall sheathing.</p>
<p>Light and Ventilation R303 R806.2 R303.4 & IECC</p>	<p>26a._____ All habitable rooms shall be provided with a total glazing area of not less than 8% of the floor area of such rooms. One-half of required glazing shall be operable. EXCEPTION: The glazed areas need not be operable where an approved mechanical ventilation system is provided or is not required by Section 310. (Glazing not required if artificial light is provided.)</p> <p>b._____ Bathrooms: 3 sq. ft. of glazing, 1/2 of which must be operable. EXCEPTION: Not required if artificial light and mechanical ventilation is provided. Vent must discharge directly outside of the building envelope.</p> <p>c._____ Enclosed attics and roof spaces shall have cross ventilation not less than 1/150 of the area. The ventilation area may be 1/300 provided at least 40% and not more than 50% of the area if equipped with ventilators/ridge vents located within 3' vertically from ridge and the balance with eave or cornice vents.</p> <p>d._____ Whole-house mechanical ventilation is required due to mandatory blower door test reading of 3 air changes per hour (50 Pascals) per the International Energy Conservation Code.</p>
<p>Fixture Clearance R307.1 R307.2 R702.4.2</p>	<p>27a._____ Each water closet and lavatory shall have a min. 15" clearance each side of center line and 21" clearance to front.</p> <p>b._____ Clearance at shower stall is min. 24" in front of opening. Min. size for a shower is 30" x 30".</p> <p>c._____ Wall surfaces around showers should be a nonabsorbent surface and shall extend to a height of not less than 6' above the drain. Cement board products, fiber-cement, or glass mat gypsum shall be used as backers for all tile in tub and shower areas and wall panels in shower areas.</p>
<p>Smoke Alarms R314 Carbon Monoxide Alarms R315</p>	<p>28a._____ Smoke alarms shall be installed in each sleeping room, outside the immediate vicinity of each separate sleeping area, minimum 3' from full bathroom openings, and on each additional story of the dwelling, including basements, cellars, and habitable attics, but not required in crawl spaces, uninhabitable attics, and garages. Smoke alarms shall be interconnected and hard wired with battery back-up.</p> <p>b._____ An approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms within dwelling units where fuel-fired appliances are installed and in dwelling units that have attached garages. If there is a fuel-fired appliance within a sleeping space, an additional carbon monoxide detector is required within that space.</p> <p>c._____ Renovations require compliance with above. When not feasible the ten year sealed battery surface mounted devices are required. If not physically interconnected, listed wireless devices are acceptable.</p>
<p>Sprinklers (Ordinance)</p>	<p>29a._____ Per Frederick County Ordinance all new dwelling units are required to be sprinklered. Sprinklers shall be a minimum of 4" and a maximum of 8' off any wall. Separate permit is required. Contact the Department of Life Safety for additional information at 301-600-3979.</p> <p>b._____ For townhouses and single family homes that have existing sprinkler systems: Every altered area, except bathrooms less than 55 sq. ft. and small closets, shall have fire sprinkler protection.</p>
<p>Fire Separation R302.5 & R302.6 Table R302.6 R302.13</p>	<p>30a._____ Garages shall be completely separated from the dwelling per the following conditions:</p> <ol style="list-style-type: none"> 1. Attached to dwelling: 1/2" gypsum board on garage side of wall common to dwelling and either: (A) extend up the same wall tight to underside of the roof sheathing—or—(B) up wall to ceiling and extended across the entire ceiling of garage. Doors into dwelling to be solid core wood not less than 1 3/8" thickness, solid or honeycomb core steel door not less than 1 3/8" thickness or 20 minute fire-rated. All doors need to be self-closing. 2. Under habitable spaces: Ceilings of the garage shall not have less than a single layer 5/8" Type "X" gypsum board. Remaining walls, supporting structure, and boxing around ductwork (if less than 26 gage sheet steel) shall not have less than 1/2" gypsum board. (Door requirements as per above.) <p>b._____ A carport not open on at least two sides will be considered an enclosed garage and shall comply with Items 30.a.(1) or 30.a.(2) above.</p> <p>c._____ Exposed floor assemblies within unsprinklered areas. Many exceptions apply.</p>
<p>Site Address (Ordinance)</p>	<p>31._____ Premise identification: Approved numbers or addresses shall be provided for all new dwellings in such a position as to be plainly visible and legible from the street or road fronting the property. Minimum 4" characters with contrasting background. Temporary posted address identification shall be installed before any required inspections are scheduled.</p>