



RESIDENTIAL BUILDING DESIGN REQUIREMENTS

Community and Economic Development

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THIS BROCHURE IS INTENDED TO PROVIDE DETAILED INFORMATION REGARDING PLAN PREPARATION FOR RESIDENTIAL BUILDINGS BUT MAY NOT BE ALL EMCOMPASSING.

1. Check each box to designate that the information has been provided.
2. Please submit this checklist as part of your submittal documents.

A. THE CITY OF ARLINGTON CURRENTLY ENFORCES THE FOLLOWING:

A1. International Codes

1. 2021 International Building Code (IBC)
2. 2021 International Residential Code (IRC)
3. 2021 International Mechanical Code (IMC)
4. 2021 International Fuel Gas Code (IFGC)
5. 2021 International Fire Code (IFC)
6. 2021 Uniform Plumbing Code (UPC)
7. 2021 International Property Maintenance Code (IPMC)
8. 2021 International Existing Property Code (IEBC)
9. 2021 Washington State Energy Code (WSEC)
10. 2017 Accessible & Usable Buildings and Facilities (ICC/A117.1)

A2. Washington State Amendments

1. WAC 51-50 Washington State Building Code
2. WAC 51-51 Washington State Residential Code
3. WAC 51-52 Washington State Mechanical Code
4. WAC 51-54 Washington State Fire Code
5. WAC 51-56 & 51-57 Washington State Plumbing Code and Standards
6. WAC 51-11 Washington State Energy Code
7. WAC 296-46B Electrical Safety Standards, Administration, and Installation

B. STRUCTURAL REQUIREMENTS

Design Wind Speed:	Exposure C - Ultimate Design – 85-110 miles per hour
Roof Snow Load:	25 pounds per square foot
Seismic Zone:	D1
Climate Zone:	4-C
Rainfall:	2 inches per hour for roof drainage design.
Frost Line Depth:	18 inches minimum
Soil Bearing Capacity:	1,500 psf. unless a Geo-Technical Report is provided. (IBC Table 1803 & IRC R401)

B1. Structural Notes

1. Specify all design load values, including dead, live, snow, wind, lateral retaining wall pressures and soil bearing values.
2. Specify minimum design concrete strength, concrete sack mix and reinforcing bar grade.
3. Specify the grade and species of all framing lumber.
4. Specify the combination symbol (strength) of all GLU-LAM beams.
5. Specify all metal connectors, including joist hangers, clips, post caps, post bases, etc.
6. Provide details showing the complete load path transfer at roof perimeter, interior shear walls, cantilevered floors, off-set shear walls and ceiling diaphragm to shear walls (if used).
7. Provide a shear wall schedule noting nail spacing, blocking, bolts, top and bottom plat nailing.
8. Locate all hold down straps on the drawings.

B2. Structural Calculations

1. Structural calculations shall be prepared by an engineer or architect registered with the State of Washington. (Not required if using Prescriptive Design Approach from the IRC/IBC.)

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2. All construction, erection, enlargement, alteration, or repairs of or to a building of any occupancy more than four thousand square feet, requires an Engineers stamp in accordance with RCW 18.08 and/or WAC 308-12.

C. PLAN DIMENSIONS AND DETAIL

1. Minimum plan size is 18" x 24" and maximum plan size is 30" x 42".
2. Plans shall be on standard drafting paper.
3. All Plan Sheets shall be the same size and sequentially labeled.
4. Plans are required to be legible with scaled dimensions, indelible ink, blue line, or other professional media.
5. Plans will not be accepted that are marked preliminary or not for construction, that have red lines, cut and paste details or those that have been altered after the design professional has signed the plans.

D. SITE PLAN - REQUIRED WITH ALL SUBMITTALS - *May be included with the Architectural Drawing Cover Sheet*

1. Drawing shall be prepared at scale, not to exceed 1" = 20 foot.
2. Show building outline and all exterior improvements.
3. Provide property legal description and show property lines.
4. Provide dimensions from the property lines to a minimum of two building corners or two identifiable locations for irregular plan shapes.
5. Show building setbacks, easements, and street access locations.
6. Indicate North direction.
7. Indicate finish floor elevation for the first level.
8. Provide topographical map of the existing grades and the proposed finished grades with maximum five (5) feet elevation contour lines.
9. Show the location of all existing underground utilities, including water, sewer, gas and electrical.
10. Show existing structures to remain on site.
11. Flood hazard areas, floodways, and design flood elevations as applicable.

E. ARCHITECTURAL DRAWINGS

1. All construction, erection, enlargement, alteration, or repairs of or to a building of any occupancy more than four thousand square feet, requires an Architect stamp in accordance with RCW 18.08 and/or WAC 308-12.

E1. Cover Sheet

1. Building Information
 - a. Specify model code information
 - b. Construction Type
 - c. Number of stories and total height in feet.
 - d. Building square footage (per floor and total)
 - e. IBC Occupancy Type
 - f. List work to be performed under this permit
2. Design Team Information
 - a. Design Professional in Responsible Charge
 - b. Architects
 - c. Structural Engineers
 - d. Owner
 - e. Developer
 - f. Any other Design Team Members

E2. Foundation Plan

1. Show north direction
2. Indicate front street (and side street if corner lot).
3. Show the location and dimension to all property lines.
4. Show the location for existing and/or proposed easements
5. Provide the scale for the drawing.
6. Show outline of foundation with section cuts and dimensions; include maximum wall heights and all connections.
7. Provide the location and size of all beams, posts, interior footings, and thickened footings within slabs with their dimensions and connections.

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8. Provide detail of step-down foundation and footings with required reinforcing steel.
9. Show spacing of anchor bolts, location, and type of hold down fasteners to the foundation.
10. Retaining walls.
11. Show the location and size of all crawl space vents and the crawl space access with size and location.
12. Show footing depth below grade and show the clearance between grade and sill plate.
13. Show the floor joist size, spacing, direction, support, connections, and blocking.
14. Show all floor insulation.
15. Label any space within the foundation (i.e., basement, garage, storage room, bedroom, etc.)

E3. **Architectural Cross Sections and Details**

1. Show a typical roof section with all materials labeled; indicate size and spacing of all members; include all dimensions, venting, insulation, and connections.
2. Show a typical foundation and floor section with all material labeled; indicate size and spacing of all members; include all dimensions, venting, insulation, and connections.
3. Show a typical wall section with all materials labeled; indicate size and spacing of all members and insulation values.
4. Show all connection details, including post-beam, post-footing, collar tie, etc.
5. Provide the dimensions for all stairs, with details showing rise, run, headroom and handrails per Section current International Residential Code. Guards require intermediate rails to be less than 4" apart; handrails are to be 34" to 38" from nose of the tread and to be returned. Show any fire blocking, landing sizes. Specify one-hour fire resistive construction for any usable space under the stairs.
6. Show a section detail for any fireplace, including the hearth and hearth extension. Include dimensions, materials, clearance from combustibles, height above roof, reinforcing, seismic anchorage and foundation details.

E4. **Floor Plan**

1. Plan view ¼ inch minimum scale. Details a minimum ¼-inch scale.
2. Plans must show the entire structure.
3. Specify the occupancy type.
4. Show **ALL** exits on the plans; include new, existing, or eliminated.
5. Show Barrier-Free information on the drawings.
6. Show the location of all permanent rooms, walls, and shafts.
7. Provide a door and door hardware schedule.
8. Show the location of all new walls, doors, windows, etc.
9. Provide details and assembly numbers for any fire resistive assemblies.
10. Indicate on the plans all rated walls, doors, windows, and penetrations.
11. Provide a legend that distinguishes existing walls, walls to be removed and new walls.

E5. **Framing Plan**

1. Specify the size, spacing, span and wood species or metal gage for all stud walls.
2. Indicate all wall, beam, and floor connections.
3. Detail the seismic bracing for all walls.
4. Include a stair section showing rise, run, landings, headroom, handrail, and guardrail dimensions.

E6. **Elevations**

1. Show elevations views of each side of the structure; provide finished floor level for each floor.
2. Show existing and proposed grades.
3. Show the maximum building height.
4. Show the maximum site slope.
5. Show all roof overhangs and any chimney clearances from the roof.
6. Show roof pitch

E7. **Door and Windows**

1. Show size and type of all doors.
2. Show the door size, type and closure device for doors between the garage and dwelling.
3. Show all window sizes and operable areas.
4. Show all sleeping room egress window locations, sill heights, methods of opening, dimension of operable area and clear open space.
5. Show size and type of all skylights.

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F. WASHINGTON STATE ENERGY CODE

1. Required by WAC 51-11.
2. Complete Residential Energy Code Envelope Summary Form (NREC).
3. See Table R406.2 and R406.3 for available Energy Credit options

	DWELLING SIZE	CREDITS
1.	Small Dwelling Unit: Dwelling units less than 1500 square feet in conditioned floor area with less than 300 square feet of fenestration area. Additions to existing building greater than 500 square feet of heated floor area but less than 1500 square feet.	3.0 credits
2.	Medium Dwelling Unit: All dwelling units that are not included in #1, #3 or #4.	6.0 credits
3.	Large Dwelling Unit: Dwelling units exceeding 5000 square feet of conditioned floor area.	7.0 credits
4.	Dwelling units serving R-2 occupancies:	4.5 credits
5.	Additions less than or equal to 500 square feet:	1.5 credits

G. SPECIAL INSPECTION – See SPECIAL INSPECTION AND TESTING AGREEMENT

H. DEFERRED SUBMITTALS – See DEFERRED SUBMITTAL FORM