TRANSPORTATION AND LAND SERVICES BUILDING SERVICES DIVISION REFERENCE SHEET (509) 884-7173

DATE: _____

TO: _____

RE: _____

Please note the following 2015 I-Codes and 2015 UPC Regulations with Washington State Amendments:

(Note: This reference sheet is limited to basic residential code sections and is provided as quick reference guide. It is not a complete list of all IRC regulations. Please consult the International Residential Code or the TLS staff if you have any questions regarding codes or construction at the number listed above). View a free listing of I-Codes at:
http://codes.iccsafe.org/I-Codes.html#all

ITEMS FROM THE FOLLOWING LIST MAY BE NOTED ON YOUR BUILDING PLANS.
NOTE: (") defined as one inch and (') defined as one foot

1. FOOTINGS: SECTION R403 I.R.C. and Title 15 of the Douglas County Code.

a . 24" minimum, from grade to bottom of footing.
b . Undisturbed earth (no spanning fill).
c . Proper width and thickness.
d . Rebar wired in place and lapped 15" minimum.

2. FOUNDATION: TABLE R404.1.1 (1)

a . Proper thickness.
b . Windows roughed in at proper size and sill height (for egress).
c . Pipes sleeved.
d . R403.1.6 – Foundation bolts: 7" minimum concrete embedment (10" J bolt typical). Spaced maximum of 6' O.C., within 1' of plate ends & splices. Minimum of 2 bolts per piece.
e . R403.1.6 – Sill plate pressure treated, redwood, or cedar.
f . R408.4 – Crawl space access through foundation and pony walls minimum 16" x 24". Crawl space access through floor shall be a minimum 18" x 24".
g. R408.2 – The minimum net area of ventilation openings shall not be less than 1 sq. ft. for each 300 sq. ft. of under-floor area. Ventilation openings shall be evenly spaced to provide cross ventilation and one shall be within 3 feet of each corner. If installed ventilation is less than 1/300, or if operable louvers are installed, a radon vent shall be installed per the 2012 WA State Building code amendments.

3. FLOORS:

a. R502.1.1 – Identification: Load-bearing dimension lumber for joists, beams, and girders shall be identified by a grade mark.
b. R502.8 – Drilling and Notching of Sawn Lumber – Notches in solid joists, rafters and beams shall not exceed 1/6 of the depth of the member, shall not be longer than 1/3 of the depth of the member and shall not be located in middle 1/3 of the span. Notches at the ends shall not exceed 1/4 depth of the member. The diameter of holes bored or cut into members shall not exceed 1/3 the depth of the member. Holes shall not be closer than 2" to the top or bottom of the member, or to any other hole located in the member.
c. R502.6.1 – Joists framed from opposite sides, lapped 3" and nailed together with three (3) 10d face nails. A wood or metal splice with strength equal to or greater than that provided by the nail lap is permitted.
d. R502.8.2 – Follow manufactures requirements for engineered wood product (BCI, TJI, etc.) installation and alterations including cuts, notches, and bored holes.
e. R502.6 – Bearing – Joists, beams or girders shall have not less than 1.5 inches of bearing on wood or metal and not less than 3 inches on masonry or concrete.
f. R317.1.4 – Post/Columns to piers shall be separated with a rated connection.
g. R502.9 – Post to girder connection shall be provided to ensure against uplift and lateral displacement.
h. R502.3 – Spans for floor joists shall be in accordance with Tables R502.3.1 (1) & (2).
i. R503.1 – Maximum spans for lumber used, as floor-sheathing sub-floor shall conform to Tables R503.1, R503.2.1.1 (1) and R503.2.1.1 (2). Sub-floor proper size and type.
j. R503.2.1 – Identification and grade. – All wood structural panels shall be identified for grade by a grade mark.
k. R502.7 – Lateral restraint at supports. Joists shall be supported laterally at the ends by full depth solid blocking not less than 2 inches nominal in thickness.
l. R503.1.1 – End joints in sub-flooring shall occur over supports unless end matched lumber is used in which case each piece shall bear on at least two joists.
m. R502.7.1 – Bridging: Joist exceeding 2 inches by 12 inches to be supported laterally by solid blocking, diagonal bridging, or a continuous 1 inch by 3 inch strip nailed across the bottom of joists perpendicular to joists not exceeding 8 ft. on center.
n. R502.12 – Draft stopping required: When usable space above and below concealed space of a floor/ceiling assembly occurs, draft stops shall be installed so that area of concealed space does not exceed 1,000 square feet. See R302.12
o. R502.13 – Fire blocking required: Fire blocking shall be provided in wood-frame construction in the following locations. At concealed spaces of stud walls, vertically at ceiling and floor levels and horizontally at intervals not exceeding 10 feet. At all spaces such as occur at soffits, and drop ceilings. Spaces between stair stringers at the top and bottom of the run. At openings around vents, pipes, and ducts at ceiling and floor levels. At chimneys and fireplaces. At two-family dwelling unit separation. See R302.11
p. R302.7 – Under stair protection. Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with ½ inch gypsum wallboard.
q. R302.13 – Under floor protection shall be provided if there is useable storage below. Typically provided with 1/2" gypsum wallboard or 5/8" wood structural panel.

4. WALLS:

a. Bracing per R602.10.3 (typically 4x8 wood structural panel within 12 feet of each corner of house). See 602.10.1 Braced Wall Lines.
b. R602.7 – Headers supported by minimum of 1 ½" bearing (see exceptions for headers in non-bearing walls).
c. R602.6 – Drilling and notching in bearing walls: Any stud in an exterior wall or bearing partition may be cut or notched to a depth not exceeding 25% of its width, and any stud (bearing and non-bearing) may be drilled, provided the diameter of the resulting hole is no greater than 60% of the stud width, the edge of the hole is no closer than 5/8 inch to the edge of stud, and the hole is not located in the same section as a notch.
d. R602.6 – Non-bearing walls: Studs in nonbearing partitions may be notched to a depth not to exceed 40% of a single stud width.
e. R602.6.1 – Top plates cut or drilled for plumbing or ductwork by more than 50% of its width, must be fastened with not less than .054" (16 gauge) thick and 1-1/2" wide metal strap, with 8-10d nails. The metal tie must extend a minimum of 6" past the opening.
f. R602.8 – Fire blocking: Wall/ceiling line of concealed soffit spaces and concealed spaces of stud walls not to exceed 10' horizontally and vertically at the ceiling and floor levels.
g. R502.12 – Draft-stopping: Properly installed (usable space both above and below the concealed space of a floor/ceiling assembly such as area above suspended ceiling, not to exceed 1,000 sq. ft.).
h. R703 – Exterior wall covering: water-resistive barrier (weather-resistant sheathing paper) behind exterior veneer is required.
i. R703.4 - Flashing around door and window openings is required.

5. ROOFS:

a. R802.10 – Trusses stamped and designed for project. Snow/live load 35 pounds per sq. ft. minimum, and increases at higher locations depending on elevation.
b. R802.10.3 – Bracing: Trusses shall be braced to prevent rotation and provide lateral stability.
c. R802.10.4 – Alterations to trusses: Truss members shall not be cut, notched, drilled, spliced or otherwise altered in any way without the approval from an engineer.
d. R802.11 – Truss & Rafter uplift resistance. Trusses and rafters shall be attached to supporting wall assemblies by connections capable of resisting uplift forces. See Table R802.11.
e. R802.5 – Spans for rafters shall be sized properly, see Tables R802.5.1 (1) – (8).
f. R802.3 – Hip or valley rafters, 2" nominal thickness and not less than depth of rafters.
g. R802.3 – Rafters nailed to ceiling joists (if parallel). See Table R602.3 (1) and R802.5.1 (9).
h. R802.8 and R802.8.1 – Rafters and ceiling joists blocked each end (trusses blocked at plate line).
i. R802.3.1 – Where ceiling joists are not parallel to rafters, metal straps attached to the ends of the rafters shall be installed in a manner to provide a continuous tie across the building. Rafter ties, 4" on center maximum if rafters/joists not parallel.
j. R803.1 and R503.2.1.1 (1) b – Plywood sheathing: covers two or more spans and gapped per manufactures requirements.
k. Column to beam connections shall be provided to ensure against uplift and lateral displacement. R802.11.1.2

6. ROOFING:

a. R905.2 – Asphalt shingles: 2:12 minimum slope, slopes 2:12 to 4:12 require double underlayment per R905.2.2 and R905.1.1.
b. R905.10.2 – Metal: If under 3:12, needs sealer strips at laps.
c. R905 – Tile, wood shakes/shingles: Installed per requirements of IRC Chapter 9.
d. R905.2.8.5 Drip Edge – A drip edge shall be provided at eaves & gables of shingle roofs.
e. R905.1.2 – Ice barrier protection required at eaves, Table R301.2 (1). No penetrations allowed through ice barrier protection materials.

7. ATTIC ACCESS:

R807.1 – Required for attics exceeding 30 square feet and have a vertical height of 30 inches or greater. Minimum 22" x 30" opening and 30" headroom above.

8. ATTIC VENTILATION:

R806.2 – 1/150 of ventilated space or 1/300 if ½ at eaves and ½ no more than 3' below the ridge or highest point of the space. A minimum of 1-inch space shall be provided (baffles) between the insulation and the sheathing at the location of the vent.

9. SMOKE & CARBON MONOXIDE ALARMS:

a. R314 Smoke Alarms – Required in the following locations: each sleeping room; outside each sleeping area in the immediate vicinity of bedrooms; each story of the dwelling, including basements and habitable attics. When more than one smoke alarm is required the alarms shall be interconnected and actuation of one alarm will activate all alarms. Smoke alarms shall receive their primary power from the building wiring.

b. R315 Carbon Monoxide Alarms – Required in the following locations: each separate sleeping area and in the immediate vicinity of the bedrooms in dwelling units and on each level of the dwelling. Existing dwellings shall be equipped with carbon monoxide alarms, and will be inspected when alterations, repairs or additions requiring a permit occur.

10. GARAGE SEPARATION WALL:

a. R302.5.1 – Openings from a private garage into a room used for a sleeping room is not permitted. Other openings between the garage and residence shall have a solid wood, solid or honey-comb-core steel door 1 3/8 inches in thickness, or 20-minute fire rated door, equipped with a self-closing device.
b. R302.5.2 – Duct penetrations. Ducts penetrating the garage wall or ceiling separating the dwelling shall be a minimum No. 26 gage sheet steel and shall have no openings into the garage.
c. R302.6 – Wall and ceiling separation. Garage shall be separated by not less than ½ -inch gypsum wallboard (GWB) on garage side. Garages beneath habitable rooms above shall be separated at ceiling by 5/8-inch type-X gypsum wallboard. Walls supporting habitable room above garage must be protected with ½" GWB. See Table R302.6

11. GYPSUM WALL BOARD:

R702.3.5 – Nails: 7" OC Horizontal, 8" OC Vertical. Screws: 12" Horizontal, 16" Vertical. Type X Gypsum at garage ceiling beneath habitable rooms shall be applied perpendicular to floor framing and attached at 6" O.C. See Table R702.3.5

12. EXHAUST FANS:

Required in each bathroom, water closet compartment, laundry room and kitchen. Point of discharge of exhaust air shall be at least 3' from operable openings into buildings, 10' from mechanical air intakes, and shall terminate outdoors through an approved terminal end opening.

13. EMERGENCY ESCAPE:

R310 – Required in all sleeping areas, lofts and basements with operable door or window directly to outside. Provide 5.7 square foot minimum net clear opening, 24" minimum net clear height, 20" minimum net clear width, 44" maximum measured from the finished floor to the bottom of the clear opening. Grade floor openings shall have a minimum net clear opening of 5 square feet.

14. TEMPERED GLASS:

R308.4 – Required in hazardous locations. Typically required in doors or within 24" arc of doors, or within 18" of floor or adjacent to tub/shower enclosure. See sections R308.4.1 through R308.4.7 for all hazardous location.

15. FIREPLACE:

a. R1005.1 – Factory-built fireplaces and chimneys; shall be listed and labeled and installed in accordance with manufacturer's installation instructions, including hearth extensions and chimney termination.

b. R1001.2 – Masonry fireplaces; concrete footing 12-inches thick and 6inches beyond edge of fireplace. Bottom of footing located below frost depth. Vertical and horizontal reinforcement required including metal straps attached to ceiling joist or upper floor. Fireplace clearances: wood beams, joists, studs and other combustible material shall have a clearance of not less than 2-inches.

c. R1003.9 Termination – Chimney shall extend at least 2-feet higher than any portion of a building within 10-feet, but shall not be less than 3-feet above the highest point where the chimney passes through the roof. Masonry chimneys shall have a concrete, metal or stone cap, sloped to shed water, a drip edge and a caulked bond break around any flue liners.

d. R1001.9 & R1001.10 Hearth and hearth extension – Concrete hearth minimum 4-inches thick, extension minimum 2-inches thick. No combustible form to remain on the underside of hearths after construction. Hearth shall extend 16-inches in front and 8-inches beyond each side of fireplace opening.

16. STAIRS:

Changes to approved stairway design require prior approval.

a. R311.7.5 – Stairs: 7 3/4" maximum rise, 10" minimum run, 36" minimum width. The greatest dimension may not exceed the smallest by 3/8". Maximum and minimum dimensions may not be exceeded.
b. R311.7.8 – Graspable ***handrail*** required on interior and exterior stairs with four or more risers. Height 34-38 inches measured from nose of tread to top of handrail. See section R311.7.8.3 for Type I and Type II handrail requirements.
c. R311.7.2 – The minimum head headroom in all parts of the stairway shall not be less than 6'8" measured vertically from the tread nosing to the ceiling.
d. R311.7.5.3 – Nosing not less than ¾-inch but not more than 1 ¼ inch shall be provided on stairways with solid risers. Exception: nosing not required where the tread depth is a minimum of 11-inches.
e. R311.7.6 – Landings: There shall be a floor or a minimum 36-inch landing measured in the direction of travel at the top and bottom of each stairway or stair-run, and shall be no less than the width of the flight served. (Exception: landing not required at top of an interior flight of stairs, provided a door does not swing over the stairs). When changing direction in a stair-run, diagonal landings are not permitted.
f. R311.7.9 – Illumination: All stairs (including exterior stairs) shall be provided with illumination in accordance with Section R303.6.

17. LANDING AND REQUIRED EXIT DOORS:

a. R311.2 Doors – Not less than one *required* exit door. The egress door shall be side-hinged, 3-feet in width and 6-feet 8-inches shall be provided. The *required* exit door shall provide for direct access from the habitable portions of the dwelling to the exterior without requiring travel through the garage.
b. R311.3 – There shall be a landing or floor on each side of each exterior door. The width of each landing shall not be less that the door served. Every landing shall have a minimum dimension of 36" measure in the direction of travel. The required egress door landing shall not be more than 1.5" lower than the top of the threshold, unless the door does not swing over the landing, in which case it may be 7 3/4" below the top of the threshold.

18. GUARDS:

a. R312.1.1 – Guards shall be located along open-sided walking surfaces, stairs, ramps, decks and landings that are 30" or more above grade within 36" horizontally to the edge of the open side. Guards shall not be less than 36" high and shall not have openings that allow passage of a sphere 4" in diameter.
b. 2012 International Mechanical Code, and IFGC, Sec. 303.4 Protection from damage. - Vehicle barriers required in front of appliances in garage if in line with a vehicle.

19. INSULATION:

a. 2015 Washington State Energy Code Minimum prescriptive requirements for low-rise residential: See current energy code specifications. *Basic Building Envelope Compliance Path*: Roof/attic R-49; Joist vaults R-38; Walls R-21; Floor R-30; Slabs R-10; Windows U-value .30. Water service pipe in unconditioned area R-4.
b. R302.14 – Combustible insulation shall be separated a minimum of 3-inches from recessed lighting fixtures, fan motors and other heat producing devices unless device is listed for lesser clearances.

20. PLUMBING:

Lead free solder required.

a. Pressure test on Potable water system, DWV (drainage, waste and vent) system, and gas line required.
b. Proper drainpipe size, slope, fittings, vents, cleanouts provided.
c. Hot water tank pressure relief valve drained to outside of building or to floor drain (provide one inch minimum air gap) using hard drawn copper, galvanized steel or cpvc piping.
d. R-10 insulating pad required under water heater when located on concrete or in an unconditioned space. Supply lines shall be insulated to a minimum R-3.
e. Sources of ignition must be kept at least 18" above floor line (typically gas water heaters).
f. Provide permanent one-inch air gap for water softener discharge at drain or standpipe.
g. 2012 UPC 507.2 – In Seismic Design categories C, D, E, and F, water heaters shall be anchored or strapped to resist horizontal displacement due to earthquake motion. Strapping shall be at points with-in the upper one-third and lower one-third of its vertical dimensions. At the lower point, a distance of not less than 4 inches shall be maintained from the controls with the strapping.

If you have any questions please call (509) 884-7173

NOTE: THIS LIST WAS COMPILED AS AN AID ONLY FOR SINGLE FAMILY RESIDENTIAL CONSTRUCTION. CONSULT THE IRC AND DOUGLAS COUNTY LAND SERVICES STAFF FOR DETAILED CODE REQUIREMENTS.

Method PFH (Portal Frame With Hold-Downs)