A RESIDENTIAL CODE SUMMARY
The Most Commonly Missed Items & Inspection Summary

2023 EDITION OF THE OREGON RESIDENTIAL SPECIALTY CODE (BASED ON 2021 IRC)
A read-only version of the 2023 ORSC is at: www.oregon.gov/bcd/codes-stand/Pages/adopted-codes.aspx

FINAL INSPECTION APPROVAL AND CERTIFICATE OF OCCUPANCY IS REQUIRED BEFORE OCCUPANCY.

Certificate of Occupancy: OAR 918-480-0140 Residential Certificate of Occupancy
(See complete OAR for additional information)
Prior to occupancy of a new residential single-family dwelling or townhouse, the building official must issue a certificate of occupancy in the form and format established by the division, unless a temporary certificate of occupancy is issued by the building official. (R110 ORSC)

HABITABLE SPACE: A space in a building used for living, sleeping, eating or cooking. Bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas are not considered habitable spaces. (R202)

BUILDING COMMONLY MISSED ITEMS

1. **Smoke and carbon monoxide alarms** must be installed in new one-and two-dwelling units, and when alterations, repairs or additions requiring a building permit occur, or when one or more sleeping rooms are added or created. **See attached handouts for location requirements.** (R314 & 315)
2. **Bathrooms, toilet rooms, and other similar rooms** shall have exterior glazed openings of not less than 3 sq. ft., one half of which must be openable, or a venting system capable of 50 cfm. **All rooms with bathing or spa** facilities shall be provided with a mechanical ventilation system capable of 80-cfm intermittent, or 20-cfm continuous. (Table M1505.5). Systems shall be designed and installed in accordance with Table M1505.5. (R303.3.1, R303.3.2)
3. **Safety glazing (Tempered Windows)** is required in the following locations: (R308.4)
   - All fixed and operable panels of swinging, sliding and bi-fold doors.
   - Individual fixed or operable panel adjacent to a door and whose bottom edge is less than 60” above the floor or walking surface, and where the nearest vertical edge is within a 24” arch of the door in a closed position, or where the glazing is on a wall perpendicular to the plane of the door in a closed position and within a 24” arc of the hinged side in the direction of swing. (See Figure R308.4.2)
   - Individual fixed or operable panel that meets the following conditions:
     - The area of the pane is larger than 9 sq. ft.
     - The bottom edge of the glazing is less than 18” above the floor.
     - The top edge is more than 36” above the floor.
     - One or more walking surfaces are within 36”, measured horizontally and in a straight line of the glazing. (R308.4.2)
   - In railings or guards (R308.4.4)
   - In walls, enclosures or fences containing or facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers and indoor or outdoor swimming pools where the bottom exposed edge of the glazing is less than 60” measured vertically above any standing or walking surface. (R308.4.5)
   - Adjacent to stairs, landings, and ramps within 36” horizontally of a walking surface when the exposed surface of the glazing is less than 36” above the plane of the

adjacent walking surface. (R308.4.6)

• Adjacent to the landing at the bottom of a stairway where the glazing is less than 36” above the landing and within a 60” horizontal arc less than 180 degrees from the bottom tread nosing. (R308.4.7)

(See code R308.4 for exceptions to the requirements above)

4. **Toilet, bath and shower spaces.** Fixtures shall be spaced as shown in Figure R307.1. (See pg.10)
5. **Bathtub and shower spaces.** Bathtub and shower floors and walls above bathtubs with installed showerheads and in shower compartments shall be finished with a nonabsorbent surface. Such wall surfaces shall extend to a height of not less than 6 feet above the floor (R307.2)
6. **Emergency escape and rescue openings.** Emergency escape and rescue openings shall have a net clear opening of not less than 5.7 sq. feet. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. The net clear height of the opening shall not be less than 24” and the net clear width shall be not less than 20”. Egress windows shall have the bottom of the clear opening not greater than 44” above the finished floor. (R310.2)

   Exception: Grade floor or below grade openings shall have a net clear opening of not less than 5 square feet.
7. **Exits.** Not less than one side-hinged min. 32” clear width by min. 78” high exit door shall be provided for each dwelling unit. The required exit door shall provide for a continuous unobstructed path from all portions of the dwelling to the exterior without requiring travel through a garage or carport and shall be openable without the use of a key or special knowledge or effort (R311.1 & R311.2)
8. **Landings.** Provide a landing at each side of an exit door being at least the same width of the door and a minimum 36” measured in the direction of travel. Landings shall not be more than 11/2” lower than the top of the threshold at the required egress door.

   Exception: The exterior landing shall not be more than 8” below the top of the threshold provided the door does not swing over the landing or floor. (R311.3 & R311.3.1)
9. **Stairways.** There must be a landing at the top and bottom of each stairway except at the top of interior stairs provided a door does not swing over the stair. A flight of stairs shall not have a vertical rise larger than *151 inches* between floor levels or landings. The width must not be less than the width of the stairway and shall have a minimum dimension of 36” measured in the direction of travel. (R311.7.1, R311.7.3, & R311.7.6) **See attached Stair Handout**

Dimensions. Minimum headroom is 6’8”. Maximum riser height is 8”; Minimum tread depth is 9”. Minimum clear width from wall to wall above the handrail is 36”. Risers cannot exceed 3/8” variance in size. (R311.7.2, R311.7.5.1 & R312.1.3)

Handrails shall be provided on at least one side of each continuous run of treads or flight with four or more risers. Grip size must be within 1 ¼” -2” circular cross-sectional dimension. If not circular, a perimeter dimension must be within 4” – 6 ¼” with a maximum cross section of 2 ¼” (See code section R311.7.8.5 if perimeter is greater than 6 ¼”); Height shall be 30” to 34” above the tread nosing; with minimum 1 ½” clearance to the wall. (R311.7.8)

Guardrails along stairs with open sides with a total rise of 30” above the floor or grade below shall be installed a minimum of 34” in height, with intermediate rails that do not allow the passage of a sphere **5”** or more in diameter. (R312.1.2)

Guards at porches, balconies, or raised floor surfaces located more than 30” above the floor or grade below (measured out 3’ from raised surface) shall have guardrails, minimum 36” in height, with intermediate rails that do not allow the passage of a sphere **4”** or more in diameter. **Note:** Do not put intermediate rails at 4” on center as this will allow the passage of a 4” sphere (R312)

Exceptions: 1. Stairways not within or serving a regulated building, patio, porch or deck. 2. Stairways leading to nonhabitable attics. 3. Stairways leading to *crawl spaces.*
See stairway guide for one- and two-family residential dwellings.

10. **Ramps serving the egress door** shall have a maximum slope of 1 unit vertical in 12 units horizontal (8.3 percent slope). (R311.8) See exception in Section R311.8.1. **Accessibility:** Dwelling units required to be accessible by ORS 447.231 shall comply with Chapter 11 of the Oregon Structural Specialty Code as applicable.
11. **Openings from a private garage** directly into a room used for sleeping purposes shall **not** be permitted. (302.5.1)
12. **Other openings** between the garage and residence shall be equipped with solid wood doors not less than 1 3/8" in thickness, solid or honeycomb-core steel doors not less than 1 3/8" thick, or 20-minute fire-rated doors. **NOTE:** windows are not permitted. (R302.5.1.1)
13. **Dwelling/garage fire separation.** The garage shall be separated as required by Table R302.6. Attachment of gypsum board shall comply with Table R702.3.5.
    • From the residence and attics: Not less than ½" gypsum board or equivalent applied to the garage side.
    • From all habitable rooms above the garage: Not less than 5/8" type X gypsum board or equivalent.
    • Walls and other structural elements supporting floor/ceiling assemblies used for separation required by this section: Not less than ½" gypsum board or equivalent.
    • Garages located less than 3 ft from a dwelling unit on the same lot: Not less than ½" gypsum board or equivalent applied to the interior side of exterior walls that are within this area.
    • Penetrations shall be tightly sealed (R302.5.3)
14. **Garage and carport floors** shall be of approved non-combustible material, sloped to a drain or toward the main vehicle entry door. (R309.1 & R309.2)
    Exception: Asphalt surfaces shall be permitted at ground level in carports.
15. **Flood-resistant construction.** Buildings and structures constructed in whole or part in flood hazard areas (including A or V zones) as identified by the Flood Plain Administrator shall be designed and constructed with the provisions contained in Section R322.1. *Please refer to the Flood Plain Administrator's Conditions of Approval attached to the building plans for specific requirements.*

FOUNDATIONS:

16. **Footings** shall be supported on undisturbed soils or fill in accordance with Section R401.2. (ORSC R403.1)
17. **Gravel or other structural fill** less than or equal to 12" in depth must be compacted with a special inspection (Section 1804.6 2019 OSSC). More than 12" requires a geotechnical investigation. (Section 1803.5.8 2019 OSSC)
18. **Lots shall be provided with adequate drainage** and shall be **graded** to drain surface water away from foundation walls. The grade shall fall a min of 6" within the first 10'. (R401.3)
19. **All reinforcing for prescriptive footings and foundations** shall comply with the requirements of ASTM A615, A706M, or A996M. ASTM A996 bars produced from rail steel shall be Type R. **The minimum yield strength of reinforcing steel shall be 40,000 psi or grade 40.** (R403.1.3.5.1)
20. **The sill or sole plate** shall be anchored to the foundation with minimum ½" diameter bolts over 3" X 3" X .229" plate washers embedded at least 7" into concrete or masonry spaced no greater than 6' on center maximum for single story structures, or 4' on center for wood light framed structures over two stories (R403.1.6.1 Item 4.), with a bolt located a maximum of 12" from the end of each plate section – minimum

two bolts per plate section. Bolts shall be located in the middle-third of the width of the plate. (Approved anchors or anchor straps may be used instead.) (R403.1.6 and R602.11.1) Post installed anchor bolts require special inspection (OSSC Table 1705.3)

21. **Retaining walls** that do not support a regulated building and do not retain material which, if not restrained, could impact a regulated building, are exempt from permit (ORS 455.020 Statewide Statutory Interpretation No. 14-03). Retaining walls that are not supported laterally at the top and retain more than 48" of unbalanced fill or exceeding 24" in height that resist lateral loads in addition to soil, shall be **designed in accordance with Section R301.1.3 to** ensure stability against overturning, sliding, excessive foundation pressure, and water uplift. (R404.4)
22. **Provide an access opening** to all under-floor areas. Access openings through the floor shall be not smaller than 18" X 24". Openings through a perimeter wall shall not be less than 16" x 24". (R408.4)
23. **Provide underfloor ventilation** within 3' of each corner equivalent to 1/150 of the crawl space area. The minimum net area of ventilation openings may be reduced to 1 sq. foot for each 1,500 sq. ft. of underfloor space area when the ground surface is covered by a 6-mil black polyethylene sheeting or other approved material, with joints lapped 12 inches at seams and extending up the foundation walls 12". (R408.1 & R408.3)
24. **Provide 6-mil black polyethylene ground cover in crawl space**, lapped 12" at joints and extending 12" up foundation walls in insulated crawl spaces. (N1104.9.2)
25. **Provide 6-mil black polyethylene under slab**, joints lapped 12" beneath all concrete floor slabs of conditioned spaces, <u>including attached garages/utility spaces attached to a dwelling.</u> (R506.2.3., N1104.9.2)
26. **Footings on or adjacent to slopes**. For placement of and structures on or adjacent to slopes steeper than one unit vertical in three units horizontal, see Section R403.1.9.1 through R403.1.9.4, and figure R403.1.9.1.
27. **Exterior foundation walls** that retain earth and enclose habitable or usable spaces located below grade shall be waterproofed with a membrane extending from the top of the footing to the finished grade. (R406.2)

PROTECTION AGAINST DECAY:

28. **Location required.** Protection of wood and wood-based products from decay shall be provided in the following locations by the use of naturally durable wood or wood that is preservative- treated in accordance with AWPA U1 for the species, product, preservative and end use. Preservatives shall be listed in Section 4 of AWPA U1. (R317.1)

- Wood joists or the bottom of a wood structural floor when closer than 18" or wood girders when closer than 12" to the exposed ground in crawl spaces or unexcavated area located within the periphery of the building foundation.
- All wood framing members and sill plates in contact with concrete or masonry foundation walls.
- Sill and sleepers on a concrete or masonry slab that is in direct contact with the ground unless separated for such slab by an impervious moisture barrier, such as 6 mil (0.006 inch) polyethylene sheeting or equivalent.
- The ends of wood girders entering exterior masonry or concrete walls having clearances of less than ½" on tops, sides, and ends.
- Wood siding, sheathing, and wall framing on the exterior of a building having a clearance of less than 6" from the ground or less than 2" measured vertically from concrete steps, porch slabs, patio slabs, and similar horizontal surfaces exposed to the weather.
- Wood structural members supporting moisture-permeable floors or roofs that are exposed to the weather, such as concrete or masonry slabs, unless separated from

such floor or roofs by an impervious moisture barrier.

- Wood furring strips or other wood framing members attached directly to the interior of exterior masonry wall or concrete walls below grade except where an approved vapor retarder is applied between the wall and the furring strips or framing members. (R317.1)

29. **Field treatment.** Field cut ends, notches and drilled holes of preservative-treated wood shall be treated in the field in accordance with AWPA M4. (R317.1.1)
30. **Ground contact.** All wood in contact with ground, embedded in concrete in direct contact with the ground or embedded in concrete exposed to the weather that supports permanent structures intended for human occupancy shall be approved pressure-preservative-treated wood suitable to ground contact use, except untreated wood may be used where entirely below groundwater level or continuously submerged in fresh water. (R317.1.2)
31. **Fasteners and connectors** in connection with preservative-treated wood and fire-retardant- treated wood shall be in accordance with this section. (R317.3) The coating weights for zinc- coated fasteners shall be in accordance with ASTM A 153.

FRAMING:

32. **Framing at braced wall lines.** A load path for lateral forces shall be provided between floor framing and braced wall panels located above or below a floor with full height blocking, as specified in Sect. R602.10.8. Exterior braced wall panels shall be connected to roof framing in accordance with Table R602.3(1) and Figures R602.10.8.2 (1), (2), & (3).
33. **Grading and fasteners.** Loading-bearing dimensional lumber for joists, beams and girders shall be identified by a grade mark of a lumber grading or inspections agency that has been approved by an accredited body that complies with DOC PS 20. In lieu of a grade mark, a certificate of inspection issued by a lumber grading or inspection agency meeting the requirements of this section shall be accepted. (R502.1)
34. **Provide 3" min. bearing** for girders entering masonry or concrete with ½" air space on tops, sides, and ends and 1 ½" of bearing on wood or metal. (R502.6)
35. **Fire protection of floors.** Floor assemblies, not required elsewhere in the code to be fire resistance rated, shall be provided with a ½" gypsum wallboard membrane, 5/8" wood structural panel membrane, or equivalent, on the underside of the floor framing member. (R302.13) *Exception 2*: Floor assemblies located directly over a crawl space **not used** for storage or fuel-fired appliances. See code for other exceptions.
36. **Joists shall be supported laterally** at the ends by full-depth solid blocking not less than 2" nominal in thickness; or by the attachment to a full-depth header, band or rim joist, or to an adjoining stud or shall be otherwise provided with lateral support to prevent rotation. (R502.7)
37. **Structural** floor members shall not be cut, bored or notched in excess of the limitations specified in this section (R502.8, Figure R502.8 see pg. 10)
38. **Decks.** Where decks are supported by attachment to an exterior wall, the attachment using toenails or nails subject to withdrawal is prohibited. Decks shall be positively anchored to the primary structure and designed for both vertical and lateral loads where positive connection to the primary building structure cannot be verified during inspection, decks shall be self-supporting. (R507.8) Ledgers shall be a minimum of 2" by 8" nominal lumber, grade 2 or better installed in accordance with Section R507.9, Table R507.9.1.3(1) and Figures R507.9.1.3(1) and R507.9.1.3(2). Deck lateral restraints, also referred to as tension ties, shall meet or exceed the allowable stress capacity specified in Section R507.9.2 and shall be installed in accordance with Figures R507.9.2(1) and R507.9.2(2). Deck beams shall be attached to posts by notching or by post cap, in accordance with Figures R507.5.1(1) and R507.5.1(2). Beam bearing on wood posts shall not be less than 1 ½". (R507.5.1)
39. **Studs** shall be a minimum No. 3, standard or stud grade lumber (see exceptions,

R602.2). Studs shall be continuous from support at the sole plate to support at the top plate to resist loads perpendicular to the wall. The support shall be a foundation or floor, ceiling, or roof diaphragm or shall be designed in accordance with accepted engineering practice. (R602.3) The size, height, and spacing of studs shall be in accordance with Table R602.3 (5). See exceptions R602.3.

40. **Maximum diameter** for holes bored in bearing wall studs is 40% (60% in non-bearing wall studs) of stud width. Maximum notching in bearing wall studs is 25% of stud width (40% in non- bearing partitions.) (R602.6 and Figures R602.6(1) and R602.6(2))
41. **Foundation cripple walls** shall be framed with studs not less in size than studs above. When exceeding 4' in height, such walls shall be framed of studs having the size required for an additional story. Cripple walls with stud height less than 14" at exterior walls shall be sheathed on one side from top plate to bottom plate or shall be constructed of solid blocking (R602.9). Interior cripple walls shall be braced with the length and method of bracing used for the wall above. (See R602.10.10 for alternatives and additional requirements).
42. **Shear nailing or stapling** must remain exposed for inspection and approval (R109.1). Fasteners must not be consistently over-driven (2015 ANSI/AWC SPDWS 4.3.6.3). Nail size must be in accordance with approved documents.
43. **Fire-blocking required.** Fire-blocking shall be provided in concealed locations, furred walls vertically at ceiling and floor line and horizontally every 10' in accordance with Section R302.11
44. **Window sills.** (R312.2) In dwelling units, where the bottom of the clear opening of an operable window opening is located less than 24" above the finished floor and greater than 72" above the finished grade or flat surface not less than 36" in width below on the exterior of the building, the operable window shall comply with one of the following:
    - Operable window openings will not allow a 4" diameter sphere to pass through where the openings are in their largest opened position.
    - Operable windows are provided with window fall prevention devices that comply with ASTM F2090
    - Operable windows are provided with window opening control devices that comply with Section R312.2.2.

WALL AND CEILING COVERING:

45. **Flame spread.** Wall and ceiling finishes shall have a flame spread classification of not greater than 200 and a smoke-developed index of not greater than 450 (R302.9). Insulation shall exhibit a flame spread index not to exceed 25 and a smoke-developed index not to exceed 450 where tested in accordance with ASTM E84 or UL 723 (See R302.10 for exceptions)
46. **Installation.** Exterior sheathing shall be dry before applying exterior cover. (R701.2)
47. **Exterior Wall Envelope.** The exterior wall envelope shall be installed in a manner that water that enters the assembly can drain to the exterior. The envelope shall consist of an exterior veneer, a water-resistive barrier, and integrated flashings. (R703.1 & R703.1.1) See Exterior Wall Enhanced Drainage self-certification form for exceptions to the space requirements.
48. **Flashing.** All exterior doors, windows, and horizontal trim with approved corrosion-resistant flashing. (See section R703.4 for a complete list of all required locations.)

ROOF/CEILING CONSTRUCTION:

49. **Wood trusses.** Shall be designed in accordance with Section R301.1.3 (R802.10.2) Truss engineering shall be submitted to the building official and approved prior to installation. Engineering for the delivered trusses must be on job site at framing inspection for all types of trusses used (R502.11.4, R802.10.1). Truss members shall not be cut, notched, drilled, spliced or otherwise altered in any way without the approval of a registered design professional. Alterations resulting in the addition of

load that exceed the design load for the truss shall not be permitted without verification that the truss is capable of supporting such additional loading.

50. **Enclosed attics** and rafter spaces shall be provided with cross ventilation. Net ventilating area shall be not less than 1/150 of the area of the space ventilated. Provide a 1" minimum air space above insulation and baffle at eave or soffit vents. (R806.2 and R806.3)
51. **Provide an accessible attic access** opening not less than 22" x 30" to areas that exceed 30 sq. ft. and have a clear height over 30" (R807)
52. **Roof coverings** shall be installed in accordance with the applicable sections of Section R905.1 and the manufacturer's installation instructions. Flashings shall be installed as required in R903.2.
53. **Roof drainage.** In areas where expansive or collapsible soils are known to exist, all *dwellings* shall have a controlled method of water disposal from roofs that will collect and discharge roof drainage to the ground surface at least 5 ft. from foundation wall or to an approved drainage system. (R801.3)

ENERGY EFFICIENCY:

54. **2023 Oregon Residential Specialty Code** has two parts:

    1. The base requirements for the Prescriptive Envelope *:* Exterior walls: R-21 Intermediate; Below grade walls: R-15 continuous/R-21; Underfloor: R-30, Slab Floor Edges: R-15; Flat ceilings: R-49; Vaulted ceilings R-30 Rafter / R-30 (Advanced) Scissor Truss (max. 50% of floor area); Exterior doors: U-0.20 (max. 28 sq ft. U=0.54); Windows: U-0.27, Skylights (max. 2% of floor area): U-0.50; Forced air ducts: R-8 (when completely inside the building envelope. Add R-19 when outside the building envelope), and
    2. One additional measure selected from a list of options. See Tables N1101.1(1) & N1101.1(2)

55. **Insulation materials.** Insulation materials shall be installed with manufacturer's listing/labeling visible in order to verify R-values. Must be able to verify R-values for blow in wall insulation. This is done by a signed company letterhead.
56. **Baffles.** Baffles of a durable rigid material shall be provided to prevent obstruction of vent openings and to deflect incoming air above the surface of porous insulation so as to prevent wind-washing and blowing of loose material. Thermal insulation shall not be installed in a manner that would obstruct openings required for attic ventilation. (N1104.2.5)
57. **Air Barriers.** An air barrier shall be provided on every vertical portion of air permeable insulation and on the warm side of horizontal air permeable insulation. (N1104.8.1)
58. **Slab-on-grade floors.** The perimeter of the floor shall be insulated. The insulation shall extend downward from the top of the slab for a minimum of 24" or downward to the bottom of the slab, then horizontally beneath the slab for a minimum total distance of 24". Exception: For monolithic slabs, the insulation shall extend downward from the top of the slab to the bottom of the thickened edge. (R1104.7)
59. **Vapor barrier**. Provide vapor barrier installed on the warm side (in winter) of insulation at all unventilated exterior walls (including behind tub/shower), floors, and ceilings enclosing conditioned space (N1104.9.1, R318)
60. **HVAC Duction Insulation Outside the building envelope.** Insulation for ducting must be R-8 plus R-19 (R-27 total) for ducting outside the building thermal envelope (N1105.3.1)

MECHANICAL AND PLUMBING:

61. **RESIDENTIAL PLUMBING PLANS ARE NOT REVIEWED PRIOR TO PERMIT ISSUANCE.** All plumbing work shall comply with current codes and will be field inspected for compliance.

- **Septic tank permits are separate from sanitary lines.** Sanitary lines are inspected by Building Inspectors not Sanitary Inspectors. A green, 14 AWG tracing wire, rated for burial must be laid in the trench with the sanitary sewer pipe and be visible for the sanitary inspection (OPSC 718.4).

62. **Flood-resistant installation.** In areas prone to flooding, all electrical and mechanical systems and plumbing appliances and fixtures shall be located at or above the flood elevation unless listing states they are designed to prevent water from entering. (R322.1.6)
63. **Heating and cooling appliances** located in a garage or carport shall be protected from impact by automobiles with min. 2" diameter pipe bollards filled with concrete or wheel barriers bolted to the slab. (M1307.3.1, Figure M 1307.2)
64. **Fuel fired appliances** shall not be located in or obtain combustion air from these locations: sleeping rooms, bathrooms, toilet rooms, or storage closets. (See exceptions G2406)
65. **An air supply for fuel combustion**, draft hood dilution, and ventilation of the space in which the appliance is installed must be provided for all liquid and solid fuel-burning appliances in accordance with Sec. M1701. These methods do not apply to fireplaces, fireplace stoves, and direct-vent appliances.
66. **Appliance access for inspection service, repair and replacement.** Appliances shall be accessible for inspection, service, repair and replacement without removing permanent construction, other appliance, or any piping or ducts not connected to the appliance being inspected, services, repaired or replaced. A level working space at least 30 inches deep and 30 inches wide shall be provided in front of the control side to service an appliance. (M1305.1)
67. **Minimum shower compartment**: 1,024 sq. inches and shall be capable of encompassing a 30" circle (OPSC408.6)

    Showers shall be equipped with control valves of the pressure balance, thermostatic mixing, or the combination pressure balance/thermostatic mixing valve type with maximum mixed water setting of 120 degrees Fahrenheit OPSC408.3. Controls shall be located on the side wall adjacent to the entrance (OPSC408.9)
68. **Water heaters.** Shall be anchored to resist horizontal movement in the upper and lower 3rd. (OPSC 507.2) Water heater lines must have a minimum R-3 insulation in not fully within the conditioned space, the 1st 8' of piping into and out of the water heater and recirculating piping. (N1106.2). PEX piping cannot be installed within 18" of the water heater. (OPSC 604.13) T&P relief valve is permitted to terminate on a sloped garage floor. Discharge from a relief valve into a water heater pan shall be prohibited. (OPSC 608.5)
69. **Attics containing appliances.** Provide an opening and a clear unobstructed passageway/catwalk to attic spaces large enough for removal of the largest piece of equipment, but no smaller than 22"wx30"h and not more than 20 ft. away from the equipment installed on a level working space M1305.1.3 & M1305.1.4 M1305.1.2. Install lighting, switched at entry point. (M1305.1.2.1)
70. **Appliance clearance.** Appliances shall be installed with the clearances from unprotected combustible materials as indicated on the appliance label and in the manufacturer's installation instructions. (M1306.1)
71. **Installation.** Heating and cooling equipment and appliances shall be installed in accordance with the manufacturer's installation instructions and requirements of this code. Manufacture instructions must be left on site for inspection approval. Metal to metal duct connections for HVAC must be sealed with mastic. Cannot use tape except for bathroom exhaust ducts and dryer vents. Where tape is permitted it must be UL-181 tape (M1601.4.1, M1401.1 & M1401.3)
72. **Outdoor discharge.** The air removed by every mechanical exhaust system shall be discharged to the outdoors. Air shall not be exhausted into an attic, soffit, ridge vent or crawlspace. (M1501.1)
73. **Exhaust Systems.** Dryer exhausts shall be independent of all other systems, shall

convey the moisture to the outdoors and shall terminate on the outside of the building. Termination shall have a backdraft damper and no screen. (M1502.3) Exhaust ducts shall be minimum 4" constructed of minimum .0157-inch-thick rigid metal ducts, having smooth interior surfaces (M1502.4.1) with joints running in the direction of airflow (M1502.4.2) protected by a nail plate extending a minimum of 2" above and below the plate line. (M1502.5) **Flexible transition ducts used to connect the dryer to the exhaust duct system shall be limited to 8 feet in length.** Exhaust ducts shall be supported every 4' and shall not have screws, or similar fasteners that protrude into the duct (M1502.4.2) See chapter M1502 for additional requirements.

74. **Dryer length limitation.** The maximum length of a clothes dryer exhaust duct shall not exceed 35 feet from the dryer location to the wall or roof termination. Each 90-degree bend accounts for 5' and each 45-degree bend accounts for 2.5' (M1502.4.6.1)
75. **Range Hoods general.** Range hoods and down draft exhaust systems shall comply with the requirements of Section M1503. Hoods capable of exhausting over 400CFM require makeup air (M1503.6)
76. **Mechanical ventilation general.** Section R303.4 requires that each dwelling unit shall be provided with whole-house mechanical ventilation in accordance with Section M1505.4. The whole-house mechanical ventilation system shall provide balanced ventilation. Local exhaust or supply fans are permitted to serve as part of such a system. Outdoor air ventilation provided by a supply fan ducted to the return side of an air handler shall be considered as providing supply ventilation for the balanced system. (M1505.4.1). The whole-house mechanical ventilation system shall be provided with controls that enable manual override. (M1505.4.2). The whole-house mechanical ventilation system shall provide outdoor air at a continuous rate as determined in accordance with Table M1505.4.3 (1) or Equation 15-1.
Exception: The whole-house mechanical ventilation system is permitted to operate intermittently where the system has controls that enable operation for not less than 25 percent of each 4-hour segment and the ventilation rate prescribed in Table M1505.4.3 (1) is multiplied by the factor determined in accordance with Table M1505.4.3 (2).
77. **Recirculation of air.** Exhaust air from range hoods, bathrooms, toilet rooms, and rooms with bathing or spa facilities shall not be recirculated within a residence or to another dwelling unit and shall be exhausted directly to the outdoors. (M1505.2)
78. **Bathroom Fans.** Rooms with a toilet, bathing facility or spa facilities provided with a mechanical ventilation system must be controlled by timer or other automatic means (M1505.6)

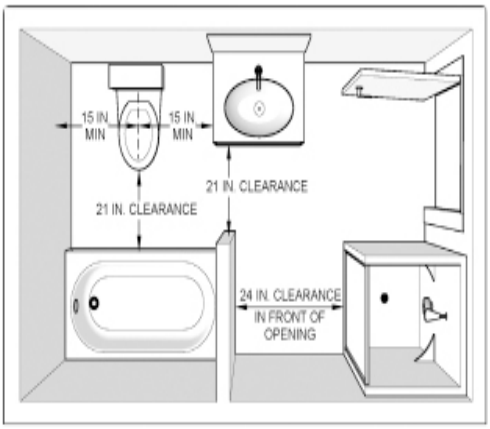

FIGURE R307.1 MINIMUM FIXTURE CLEARANCES (See the *Plumbing Code* for shower clearances)

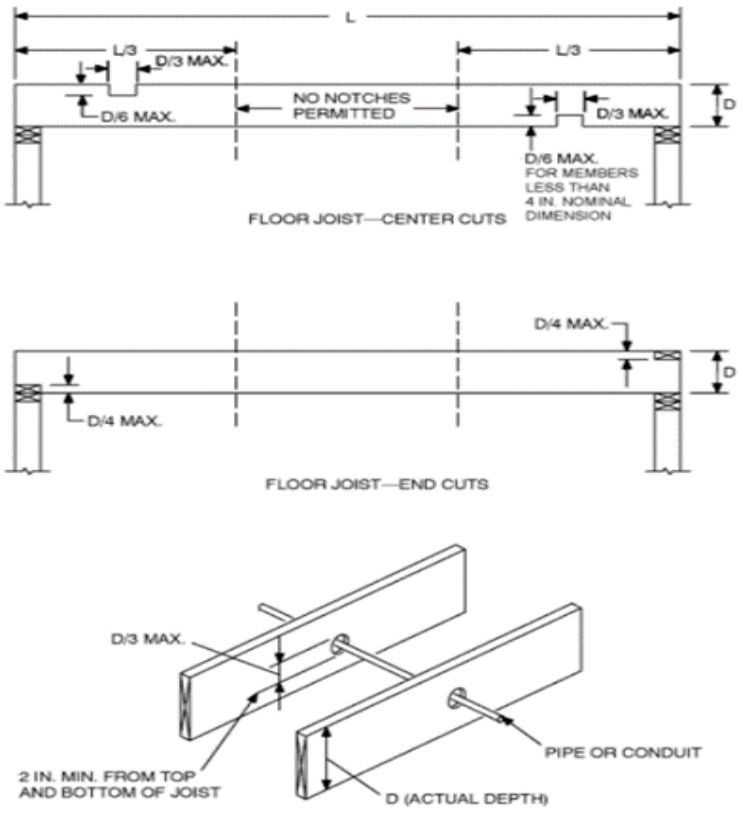

FIGURE R502.8 CUTTING, NOTCHING AND DRILLING

RESIDENTIAL INSPECTION PROCESS

This handout is for informational purposes ONLY and does not mandate construction means or methods beyond Building Code requirements and Lane County Inspection Policies. Please be aware that any work covered prior to inspection will be required to be removed to allow for inspection. Costs of uncovering work for inspection and correction are not the responsibility of the County.

Photographs are not an acceptable alternative to inspections. Photographs will not be accepted for work done without prior and explicit permission from the Building Inspector and the Building Official. If given permission to use photos, they must be submitted within 24 hours of the request.

Please keep in mind it is important to schedule all the requested inspections. If the inspection is not scheduled the inspector is probably not looking at it. One of the most common issues that come up during a final is outstanding inspections that where never scheduled. Sometimes it is assumed that the inspector looked at it because it was exposed whilst they were on site but do not assume that because your inspector *saw* something, that they *inspected* it. It is highly recommended everyone follow the inspection progress online and not cover anything unless you see it approved on the permit. Please make sure all installations are complete and ready for inspection prior to scheduling. If changes are made to the approved plans, they will need to be resubmitted to the office as additional information (AI). Once notified the AI has been approved it must be picked up and on site at the time of inspection. Please plan ahead for changes as they will cause delays in the project. Inspectors cannot approve an inspection until the approved details are on site and the AI process takes time.
Inspectors should also be signing the plans for approvals as a courtesy to track inspection progress.
A "partial" inspection result is usually for a partial approval. For example, if a house has gas piping in the crawl space, a gas piping pressure test inspection must be scheduled with underfloor mechanical and will be a "partial" result with notes indicating the underfloor is ok. The gas pipe will also need to be inspected at the rough stage if the stubs at the floor are extended overhead. Only after all the gas piping has been inspected will it get an approval and green tagged.
Please note that all inspections must be scheduled in order. Inspections will not take place unless all inspections prior have either been approved or given the okay to proceed by your inspector (R109.4).

- **Foundation:** Made after trenches are excavated, forms erected, steel placed, and **BEFORE** concrete is poured. UFER grounding electrode is generally tagged at this inspection, prior to pouring and should be scheduled with the foundation inspection. CMU foundation walls and masonry chimneys must also be scheduled once block is installed (general max lift height of 64", see R606.3.5.1 for exceptions) and once all rebar is installed prior to grout being poured.
- **Floodplain Certification:** Not performed by building inspector. Please turn the completed and signed form into the Planner who has reviewed the Flood Plain permit.
- **Underground Piping (Sanitary Sewer/Water Service):** Made after all underground piping & tracer wire has been installed and prior to any backfill. Pipe must be on test for inspection. This also applies to underground gas piping. NOTE: Water service is from well head all the way to home, including pump house.
- **Underground and Service for Electrical (Separate Permit);** Underground is scheduled once trench work is complete but prior to backfill. Service is scheduled once the meter, panel and any transfer switches are complete.

- **Post and Beam/Underfloor Framing Inspection:** Made after all underfloor crawl spaces girders and mudsill anchors are installed and service, mechanical equipment and gas lines, underfloor plumbing, electrical conduit, and other ancillary equipment items are in place but before any floor sheathing is installed.
- **Underfloor Insulation:** Made prior to covering the first-floor joists with decking, unless approved for cover by the Building Inspector.
- **Exterior Shear:** Made after the decking and subfloors are installed and the building's exterior shear wall are ready for inspection. Nailing patterns and hold downs must remain exposed for inspection.
- **Rough Electrical (separate permit):** After all electrical wires are run and boxes are made up. Splices complete but before devices are installed. Building must be completely dried in prior to running any wire inside building. Note, rough electrical must be approved prior to scheduling framing.
- **Rough Mechanical:** Made after all ducting and gas piping has been installed and prior to being covered. This is typically scheduled along with framing.
- **Rough Plumbing:** Made after all plumbing rough-in is in place and system is on test prior to being covered. This is typically scheduled along with framing.
- **Framing:** Made after all framing, fire blocking, bracing and roof are in place and all pipes, chimneys and vents are completed and rough electrical, rough plumbing and rough mechanical inspections have been approved. If applicable interior shear walls should also be scheduled with framing (unless gypsum panels are used). Framing inspection will not take place until electrical rough has been approved.
- **Insulation Wall and Ceiling:** Made after all insulation and vapor barriers are in place, prior to covering.
- **Interior Shear:** Made after structural panel or gyp has been installed and fastening patterns/ hardware are ready for inspection, but before any covering, taping, plastering, or compounds are applied. Interior shear walls should be scheduled along with framing unless using gypsum board shear walls.
- **Final Electrical:** This is scheduled once all electrical work is complete and must be approved prior to scheduling final building.
- **Final Mechanical:** Made once all mechanical systems are complete and just prior to the structure or remodeled area being occupied and prior to operating any equipment.
- **Final Septic (Separate Permit):** When the subsurface construction is complete, the permit holder shall notify Land Management's Onsite Wastewater Sanitation Program by submitting the installation record form. A list will be generated for the specific inspections for the system type. All Sanitation inspections are completed prior to the final building inspection. Note, the septic inspections do not cover the sanitary sewer inspection.
- **Final Plumbing:** Made once all plumbing systems are complete and just prior to the structure or remodeled area being occupied. This occurs after all water service components and sanitary sewer connections have been inspected and approved.
- **Final Building:** Made once everything is complete and after finish grading and before the building, structure or remodeled area occupied. The electrical and septic permits must be approved prior to scheduling final building. Note, the final mechanical and final plumbing can be done together with final building.

Other Inspections: The Building Official may require other inspections of any construction work to ascertain compliance with provisions of the code and other laws enforced by the code enforcement agency, such as:

- **Self-Certification Forms:** Not performed by Building Inspector but turn in the completed and signed forms to the building inspector at final building.
- **Special Inspection Forms**: Not performed by Building Inspector but turn in the completed and signed form into the Building Inspector. Ensure that special inspections

are performed in accordance with the Engineer's statement of special inspections, regarding sequencing and observation.

Manufactured Home Inspections

- Footings- this inspection is primarily used if a concrete slab or runners are installed. This must be done after site is graded and compacted, after forms and rebar installed but prior to the placement of concrete. If concrete is not used this can be scheduled along with set up and will include the ABS footing pads or pressure treated wood the piers sit on.
- Set Up- this is done once the home has been placed and all piers and seismic restraints installed. After the marriage lines have been sealed and secured and all underfloor utilities have been completed and connected but prior to the placement of any skirting.
- Electrical Connections- this takes place after the electrical has been run from the meter to the panel and before skirting has been installed. This could be done with the set-up inspection.
- Skirting- This inspection takes place once the skirting has been completed. This could be scheduled at final along with steps/rails and landings so long as the skirting is not structural. Structural skirting such as CMU will need to take place once all the block is laid, and rebar installed but prior to placement of grout. Please reach out to your area inspector if you are unsure if your skirting is structural or not.
- Steps/Rails/and Landings- This inspection takes place once all your steps, landings, handrails or any decks are complete. This can typically be done alongside final.
- Final Plumbing- This inspection takes place once the sanitary sewer and water service are complete (please see "underground piping" from the residential list) and water heater piping along with any condensate drains have been run out of the crawl space. This can be scheduled along with final manufactured dwelling.
- Final Manufactured Dwelling- This is scheduled once everything, including separate electrical permit (when required) is complete. It is common to schedule your final along with skirting (except with structural skirting), steps/rails/landings and final plumbing.