



2024 INTERNATIONAL RESIDENTIAL CODE, 2024 INTERNATIONAL ENERGY CONSERVATION CODE, COLORADO MODEL ELECTRIC READY AND SOLAR READY CODE

Revised 11/20/2025

Review Checklist to be filled out by Design Professional or Homeowner

Submittal Date: _____

Building Address: _____

Owner's Name: _____

Main Building Sq. Ft: _____ Other: _____

Total Area Basement: _____ Type of Building: _____

Finished Basement: _____ No. Stories: _____

Garage: _____ No. Levels: _____

Deck/Balcony: _____ Area of LOD: _____

Fire Sprinklers: ___ Area: _____ Number of Bedrooms: _____

Wind Speed: _____ (Per [ASCE Hazard](https://ascehazardtool.org/)) <https://ascehazardtool.org/>

Ground Snow Load: _____ (Per [ASCE Hazard](https://ascehazardtool.org/)) <https://ascehazardtool.org/>

Soil Bearing Capacity: _____

No. Backflow Preventers: _____

Zone District: _____

In Old Town Overlay?:

Name of PUD (if applicable): _____

Year built: _____ (Buildings older than 1955 require additional review)

: Discussed project with the Planning Division

Visit the City's [Online Map](#) for this information

This checklist is compiled for plan checking purposes for use by the Division of Building Safety.

The owner or architect is required to check each box throughout the check list to verify they have submitted plans with the required information. Failure to do so will result in the plans not being reviewed. Please indicate N/A if the item is not applicable.

The information contained herein will also provide condensed construction information for design and job use. This checklist is not intended to indicate any change in any building code or ordinance by inference or omission. Please circle around the checklist number to indicate that the item listed is on the set of plans that you are submitting. **Failure to have the checklist items listed NOT on your set of plans will result in your plans going back to you or your design professional and additional plan review fees may be assessed, with an additional wait time of 2-6 weeks.** Any indicated correction not made or construction detail not shown will assume to be installed in accordance with the City's adopted Building Codes and Standards.

Note: New Buildings must be rated by a RESNET Rater before plans can be submitted and shall have an ERI (Energy Rating Index) of 50 or less without including OPP (On-Site Power Production). ERI based compliance shall meet all of the minimum standards listed in IECC Table R406.3, amended.

SPECIAL REQUIREMENTS:

- SR1. Wood burning appliances including fireplaces, are severely restricted. All wood burning devices shall meet the following:

A fireplace or fireplace insert that meets the most stringent emissions standards for wood stoves established by [C.R.S. Title 25, Article 7](#) and the Colorado Department of Public Health and Environment Air Quality Control Commission Regulations or any other clean burning device that is approved by the Air Quality Control Commission Regulations.

(Ord. No. 1907-2025, § 15.05.270, 11-03-2025)
- SR2. Show on the plans where the parking will be for the construction vehicles.
- SR3. Show on the plans where the construction material storage will be located. NO storage of construction material shall be allowed in the public right-of-way unless approved by Public Works. .
- SR4. Show a plan for where the excavated material will be deposited. Keep in mind that a separate permit is required for fill areas if they are not on the same lot as the excavation.
- SR5. Provide a letter from the "Master Home Owners Association" showing that they have reviewed the plans (if there is one).
- SR6. **Mine Hazards:** Provide a plan that shows the location of Mine Hazards such as shafts and tunnels as they relate to this site. This would be any mines

etc. within 100 feet of this lot. See the “map” that is part of “the agreement”. [City of Louisville Mine Map](#)

- SR7. NO DEFERRED SUBMITTIALS ALLOWED on Residential Homes. Must have a complete set of plans that are stamped by Architect or Engineer, Must have Sprinkler Plans, Plumbing Plans, Mechanical Plans, Manual J,D and S, RESnet Rater Check List, Structural Plans, Foundation Plans.
- SR8. Fire Hardening Requirements must be met. Attach Manufactures specification on all Exterior Materials used and must show ASTM-E84 Class A. Example on siding, soffits, trim, Fencing 8 ft or less from structures, accessory structures, decking material, guardrails, metal gutters, screens on venting. Class A roofing no wood shake shingles.

GENERAL:

- G1. Construction street address, owner’s name, designer’s name, and an architect and/or engineer’s name and seal on the drawings, if available.
- G2. Provide a plan index.
- G3. Submit a completed set of drawings including: Plot Plan (site plan), **Certified Topographical Survey with certified boundaries**, Floor Plan, Foundation Plan Elevations, Specifications, Building Sections, Wall Sections, Construction Details, and one set of Structural Calculations for Additions, Decks Patios, and New Buildings (and staging plans). See Handout for Survey Guidelines.
- G4. Note the total existing area square footages of each level, using outside wall measurements, and note it on the plans. Also, note all new area square footages separately. List the areas of the garage and deck separately. In addition, note the area of the LOD (Limits of Disturbance), excluding footprint of house, sidewalks, hard surfaced patios and driveways. Include allowed and proposed lot coverage and floor area ratio, if applicable.
- G5. Provide a grading plan showing the relative elevation of the foundation as it relates to the curb and gutter and the relationship of the home to finish grade. Include a “datum” (USGS) point or other benchmark that will remain available and accessible throughout the construction. See the Handout on how to determine Grade and Building Height.
- G6. Label all existing and proposed streets, alleys and adjacent property lines on the Site Plan. Dimension the distances to front, side and rear property lines. Include dimensions to all setbacks.
- G7. Show size of lot on the site plan to conform to the legal description. -IRC R106.2

- G8. If the adjoining properties have a structure that encroaches over property lines onto this new construction site, you must supply a property title search for the property.
- G9. Show the 'Limits of Disturbance' (LOD) on the Site Plan including all utility crossings, material storage and stockpile areas, driveways, re-graded areas, proposed landscaped areas, and construction parking areas.
- G10. Show location and type of silt fence for control of polluted runoff (NPDES Phase II).
- G11. Show and note on site plans: Surface water shall drain away from the house at all points. Direct the drainage water to the street or to an approved drainage course but not onto neighboring properties. The grade shall fall a minimum of 6 inches within the first 10 ft. **Note this on site plan.** -IRC R401.3.
- G12. Comply with IRC Chapter 4 for excavations, fill, cuts, and grading. Pay special attention to 'tall' cuts close to property lines. **Cut slopes and grade fills steeper than 2:1 require soils reports addressing stability.** General Contractor is to arrange a meeting with the Plan Checker, the General Contractor, and the Excavator for this project, prior to any permits being issued.
- G13. Rock walls greater than 4 feet require engineering.
- G14. Provide certification from an architect or engineer demonstrating that the proposed development is in compliance with the City's Flood Hazard Ordinance, if applicable.
- G15. Show on the Site Plan the location of the construction trash container and portable toilet.
- G16. Show and identify all proposed and existing buildings on the Plot Plan.
- G17. Note the floor elevation for all floors, landings, and decks on plan views and building elevations.
- G18. Existing structure has undergone historic demolition review, landmark designation, and/or alteration certificate review. Please provide a copy of the letter from the Planning Division to complete the plan review.
- G19. If property is within the Old Town Overlay Zoning District, specify any request for exemptions or bonuses through the Planning Division.
- G20. For driveways that go across public property (we believe 99% of them will, so we will assume all do), provide a copy of the "[Application to work in a Public Right of Way](#)" that has been approved by the City Engineering Department.

Additional General Comments:

FOUNDATION PLAN:

- F1. Verify type of soil at the construction site. The classification of the soil at each building site shall be determined when required by the Building Official. The Building Official may require that this determination be made by an engineer or architect licensed by the State. When expansive soils are present special provisions may be required in the design of foundations. -IRC R401.4
- F2. Provide a plan that shows the location of mine shafts and tunnels as they relate to this site. This would be any mines within 200 feet of this lot. [City of Louisville Mine Map](#)
- F3. Show footings a minimum of 36 inches below finish grade. -IRC R403.1.4.1
- F4. Specify concrete mix with a minimum compressive strength of 3,000 psi. - IRC R402.2
- F5. Submit a complete gravity load path design including roof, floors, walls, columns, foundations, and footings. Detail these elements on the drawings. Submit a complete lateral-force-resisting-system design. Detail these elements on the drawings. -IRC R106.1.1 and R301
- F6. Show the top of foundation walls a minimum of 4 inches above the non-combustible grade where masonry veneer is used and a minimum of 6 inches above grade elsewhere. -IRC R404.1.6 (amended)
- F7. Show minimum 1/2" foundation anchor bolts spaced not greater than 6 feet on center and embedded a minimum of 7 inches into the concrete or masonry. Specify type, size, and spacing of other bolts or alternate plate fastening methods. -IRC R403.1.6
- F8. Show a minimum 18 inch clearance for wood joists and 12 inch clearance for wood girders in the crawlspace unless naturally durable wood or pressure treated wood is specified. -IRC R304.1, Item 1
- F9. Unvented crawlspaces must show how it meets IRC R408.3. If the under-floor space is vented (IRC R408.2): Minimum 1 sq ft for each 150 sq ft of under floor area. One such ventilation opening shall be within 3 feet of each corner of the building. -IRC R408
- F10. Concrete floor slabs, except those in unheated accessory structures, shall have a vapor retarder consisting of a 6 mil (.006 inch) polyethylene or approved vapor retarder with joints lapped not less than 6 inches placed between the

concrete floor slab and the base course or the prepared sub-grade where no base course exists. -R506.3.3

- F11. Slab-on-grade floors with a floor surface within 24 inches above or below grade shall be insulated, R-10 or R-15 for heated slabs. -IECC R402.1.2 and R402.2.10
- F12. Note on foundation plans: For foundations, rebar inspections for foundation walls over 8 feet high, forms are not to be installed on one side until after the rebar has been inspected and approved.
- F13. Provide a perimeter foundation drain. Drained to an approved location, show on site plan. -IRC R405
- F14. Provide a UFER ground. Note this on foundation plan and in Electrical Notes. -NEC 250.52(A)(3)
- F15. Note the elevation of the top of the footings and top of the foundation on the Foundation and Footing Plan. -IRC R106.1.1

Additional Foundation Comments:

ARCHITECTURAL:

- A1. Dimension the overall length and width of the building. -IRC R106.1.1
- A2. Dimension all rooms. -IRC R106.1.1
- A3. State the use of all rooms on the floor plan(s). -IRC R106.1.1
- A4. All habitable rooms, except kitchens, are to have an area of not less than 70 sq ft with a minimum of 7 ft in any dimension. -IRC R312.1 and R312.2
- A5. Habitable rooms, hallways, corridors, and portions of basements containing these spaces shall have a ceiling height of not less than 7 feet measured from finished floor to finished ceiling. Bathrooms and laundry rooms can be at 6'8". Not more than 50% of the required floor area is permitted to have a sloped ceiling less than 7 feet with no portion of the required floor area less than 5 ft in height. -IRC R313
- A6. Dimension all windows and show what area of the window opens. -IRC R106.1.1

- A7. Minimum window area shall equal not less than 8% of the floor area of the room unless artificial light is provided capable of producing an average illumination of 6 foot candles over the area of the room at a height of 30 inches. - IRC R325.1.1
- A8. Natural ventilation equaling 4% of the floor area shall be through windows, doors, louvers or other approved openings to the outdoors unless an approved mechanical ventilation system is provided capable of producing 0.35 air changes per hour in the room or a whole-house mechanical ventilation system is installed. -IRC R325.1.2
- A9. Show emergency egress for basements with habitable space and each sleeping room: an exterior door or window with the bottom of the clear opening not greater than 44" above the floor, minimum net clear opening area of 5.7 sq ft, minimum net clear opening width of 20" and minimum net clear opening height of 24". Grade floor openings may have a minimum net clear opening of 5 sq ft. - IRC R319.2
- A10. The glazing area in bathrooms, water closet compartments, and other similar rooms shall not be less than 3 sq ft, one-half of which shall be openable, unless a mechanical ventilation system capable of producing 50 cfm for intermittent operation or 20 cfm for continuous operation is provided. Ventilation air shall be exhausted directly to the outside. -IRC R325.2 and M1505.5
- A11. R-values shall be listed for the Thermal Envelope: R-60 Ceiling, R-30 or R-20 & R-5 ci Walls, R-15 Heated slabs, R-8 Ducts, and R-38 Under Floors with type of insulation used. U-Values for Windows = U.30 and Skylights = U.50 - IECC Table R402.1.2 (amended)
- A12. Glazing used in doors and panels of showers and bathtub enclosures and walls enclosing these compartments shall be safety glazed. -IRC R324.1, R324.3.1, and R324.4.5
- A13. Safety glazing shall be provided in: Frameless glass doors, glass in doors, glass within a 24" arch of doors, glazing less than 60" above a walking surface that is within 5 ft of stairs, or glazing within 5 ft of spas or pools, certain fixed glass panels, and similar glazed openings subject to human impact. -IRC R324.4
- A14. Show not less than 1/2 inch gypsum boards on the garage side of the wall and 5/8" Type X gypsum boards on the ceiling separating a garage and a dwelling. Where the separation is a floor-ceiling assembly, the structure used for separation shall be protected with not less than 1/2 inch gypsum boards on the ceiling. -IRC R302.6
- A15. Doors leading from dwellings to the garage shall be 1-3/8" thick solid or honeycomb-core steel doors or a 20-minute fire-rated door (must be labeled) and self-closing and self-latching. This shall be labeled on the plans. Doors shall not open into a sleeping room. -IRC R302.5.1
- A16. Carports not open on at least two sides shall be considered a garage and shall comply with the fire separation requirements of a garage. -IRC R317.2

- A17. If the property is in the Old Town Overlay, provide a table showing compliance with the Roof Pitch requirement.
- A18. Stairways shall not be less than 36 inches in clear width at all points above the permitted handrail height. Handrails shall not project more than 4.5 inches on either side. -IRC R318.7.1 and R320.3
- A19. The tops of handrails shall be placed between 34 inches and 38 inches above the nosing of the treads. They shall be continuous the full length of the stairs. Ends shall be returned or shall terminate in newel posts or safety terminals. The handgrip portion of handrails shall be not less than 1-1/4 inches nor more than 3/4 inches in cross-sectional dimension, or the shape shall provide an equivalent gripping surface. Handrails projecting from a wall shall have a space of not less than 1.5 inches between the wall and the handrail. -IRC R320.
- A20. All unenclosed floor and roof openings, open and glazed sides of landings and stairs, balconies and porches more than 30 inches above grade, and roofs used for other than service of the building shall be protected by a guard (aka "Guardrail"). Guards shall not be less than 36 inches in height. Open guards shall have intermediate rails or an ornamental pattern such that no sphere 4 inches in diameter can pass through. -IRC R321.1
- A21. The minimum headroom in all parts of a stairway shall not be less than 6'-8" measured vertically from the sloped plane adjoining the tread nosing or from the floor surface of the landing or platform. -IRC R318.7.2
- A22. Stairway risers shall not exceed 7 3/4 inches and tread shall not be less than 10 inches. If open risers are provided, the openings shall be less than 4". - IRC R318.7.5.
- A23. Landings shall have a minimum dimension measured in the direction of travel of 36 inches. -IRC R318.7.6.
- A24. Show 1/2" gypsum board on walls and soffits under a stairway with enclosed accessible space. -IRC R302.7
- A25. Fireblock stud spaces at soffits, floor and ceiling joist lines, at 10 ft vertically and horizontally, at openings between attic spaces and chimney spaces for factory-built chimneys, and at any other locations not specifically mentioned which could afford passage for flames. -IRC R302.11 and R1003.19
- A26. No wood shall be closer than 8 inches to earth unless separated by concrete at least 3-1/2 inches in thickness with an impervious membrane installed between the earth and the concrete. This includes decks and siding. - IRC R304.1
- A27. Provide a detail that shows how the joint between the wood columns and the veneer will be flushed. Keep in mind the differentials in materials. -IRC R703.4

- A28. Roof decks shall be covered with materials as set forth in Section R904 or with roof coverings as set forth in Section R905. Class A roof coverings shall be installed and shall be tested in accordance with ASTM E108 or UL 790. The roof assembly shall be listed and identified as to class by an approved testing agency. Exceptions: (1) Class A roof assemblies include those with coverings of brick, masonry and exposed concrete roof deck. (2) Class A roof assemblies include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile, or slate installed on noncombustible roof decks. (3) Class A roof assemblies include minimum 16 ounces per square foot (4.882 kg/m²) copper sheets installed over combustible roof decks. (4) Class A roof assemblies include slate installed over underlayment over combustible roof decks. -IRC R902.1 (amended)
- A29. Specify roofing material products, including ice barrier. Show roof slope. - IRC Chapter 9
- A30. Unless roofs are sloped to drain over roof edges, roof drains shall be installed at each low point of the roof. Gutters shall be metal and shall have gutter guards installed on all new and replaced gutters. -IRC R903.4 (amended)
- A31. Wood shingles (IRC R905.7) and wood shakes (IRC R905.8) are no longer allowed due to the adoption of the Fire Hardening Code
- A32. Composition shingles shall not be installed on roofs having a slope less than 4" in 12" unless double underlayment is installed in accordance with IRC Table R905.1.1(2).
- A33. Asphalt shingle, clay and concrete tile, metal shingle, mineral-surfaced roll roofing, slate and slate-type shingles require an ice barrier that extends from the edge of the eaves to a point not less than 24 inches inside the exterior wall line of the building. -IRC R905.1.2
- A34. Accessible below-floor areas shall be provided with a minimum 18" x 24" access opening. -IRC R408.4. For access to mechanical equipment in these areas see IRC M1305.1.3.
- A35. The minimum net free roof ventilating area shall not be less than 1 to 150 of the area of the space ventilated. This may be reduced to not less than 1 to 300 if openings are provided in the upper and lower portions of the ventilated space. - IRC R806.2
- A36. Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain or snow. Ventilation openings shall have a least dimension of 1/16 inch minimum and 1/4 inch maximum. Ventilation openings having a least dimension larger than 1/4 inch shall be provided with corrosion-resistant wire mesh with openings having a least dimension of 1/16 inch minimum and 1/8 inch maximum. Openings in roof framing members shall conform to the requirements of IRC R802.7. Required ventilation openings shall open directly to the outside air and

shall be protected to prevent the entry of birds, rodents, snakes and other similar creatures. -IRC R806.1 (amended)

- A37. Unvented conditioned attic assemblies and unvented enclosed roof framing assemblies shall comply with IRC R806.5.
- A38. Show a minimum 22" x 30" attic access in a hallway or other location with ready access. -IRC R807. See IRC M1305.1.2 for access to furnaces and other mechanical equipment in attics.
- A39. Provide listing (approval) number for fireplace stove, fireplace insert, or shower steamer appliance. -IRC M1302.1
- A40. Include a cross-section detail of the firewalls for townhouses on Party walls and "Zero" lot lines. -IRC R302.1 and R302.2
- A41. Show minimum of 2 inch thick redwood planks for deck if deck joist spacing is 16" on center or greater. Nominal 1" thick planking shall not be used where deck joists are spaced greater than 12" on center. -IRC R507.7
- A42. Show exterior grade plywood or other approved exterior materials for soffits. -IRC R704.3
- A43. Exterior walls shall provide the building with a weather-resistant exterior wall envelope. Exterior siding shall meet the Fire Home Hardening Code. Exceptions: (1) Log walls designed and constructed in accordance with the provisions of ICC 400. (2) Historic Structures.
- A44. Provide exterior cladding details on plans. Exterior cladding shall comply with IRC R703.
- A45. Show 24-inch on-center blocking for vertical siding. -IRC R703.3
- A46. Provide a cross-section of the anchored stone and/or masonry veneer that includes thickness of total masonry, attachment methods, nailing schedules, ledger sizes and attachment methods, furring details, weather-barrier membrane, etc. -IRC R703.8
- A47. Provide information on the plans demonstrating compliance with the City of Louisville Prescriptive Energy Code such as R-values, U-factors and solar heat gain coefficients (SHGC), area weighted U-factor, mechanical system design, mechanical and service water heating systems, equipment size and efficiencies, equipment and system controls, duct sealing, piping insulation, and air sealing details. -IECC R105.2
- A48. Stair tread nosing: The radius of curvature at the leading edge of the tread shall be no greater than 9/16 inch. A nosing not less than 3/4 inch but not more than 1-1/4 inches shall be provided on stairways with solid risers. The greatest nosing projection shall not exceed the smallest nosing projection by more than 3/8 inch between two stories, including the nosing at the level of floors and landings. Beveling of nosing shall not exceed 1/2 inch. Risers shall be vertical or

sloped from the underside of the leading edge of the tread above at an angle not more than 30 degrees from the vertical. -IRC R318.7.5.3 and R318.7.5.1

A. A nosing is not required where the tread depth is a minimum of 11 inches. Note: This means that concrete stairs, without nosings, must have a tread depth of 11 inches. -IRC R318.7.5.3, Exception 1

B. The opening between adjacent risers is not limited on stairs with a total rise of 30 inches or less. -IRC R318.7.5.1

- A49. Show a minimum Class I or Class II 'responsive' vapor retarder over the insulation on the inside (warm side) of all exterior walls and roof ceilings or which system is going to be used. -IRC R702.7
- A50. Exterior walls shall provide the building with a weather-resistive exterior wall envelope. Provide weather-resistive barrier flashing details for windows, door and other openings in the building envelope, include manufacturer's installation instructions. **Also provide flashing details for over doors, windows, sills, at foundation, columns, and other locations requiring flashings.** -IRC R703.1, R703.4, and R703.4.1
- A51. Show the location of the clothes washer and dryer. -IRC R106.1.1
- A52. Tubs and showers with tiled walls shall be installed per IRC R702.4.1. Backer board for wall tile in tub and shower areas and wall panels in shower areas shall be of materials listed in IRC Table R702.4.2. Green board is no longer allowed in this application. -IRC R702.3.7 and R702.4.2
- A53. Show on the drawings that inspections are required for all stucco and EIFS systems. Provide product specifications and ICBO Evaluation or ICC-ES Report (or equal) for any stucco or EIFS system used. -IRC R109.1.5, R703.7, and R703.9
- A54. Show that window wells will provide a minimum net clear opening of 9 sq ft with a minimum dimension of 36 inches. Show a permanent ladder if window well is more than 44 inches deep. -IRC R319.4
- A55. All new one- and two-family dwellings in the City of Louisville require fire sprinklers. NOTE: Sprinkler design specifications shall be on the plans for all new one- and two-family dwellings. -IRC R309.2 (amended)
- A56. Provide fire assembly construction details and approval listings for dwelling unit separations and exterior walls with a fire separation distance less than 3 feet. -IRC R302.1, R302.2, and R302.3 NOTE: If a fire sprinkler system is required, it may be substituted for the fire assembly of some of the exterior walls per IRC Table R302.1(2).
- A57. Snow shedding: If the setback from any property line is less than 10 feet, or if snow shedding occurs over any exit door, site plans and building designs shall resolve snow release issues to the satisfaction of the Chief Building Official.

Solutions must minimize the impacts of snow shedding on adjacent properties and/or improvements.

- A58. Showers shall have doors sized to provide a minimum of 22" inch net clear opening. -IRC P2708.1.1. Also, hinged shower doors shall open outward. -IRC P2708.1
- A59. No Deferred Submittals for Residential Projects.
- A60. Sills of exterior windows which are located more than 6 feet above grade, and less than 24 inches above the interior floor surface must meet some new requirements. The area of the window less than 24 inches above the interior floor surface must now be fixed or have an opening or a guard which does not allow the passage of a 4 inch diameter sphere. -IRC R321.2
- A61. A permanent certificate shall be posted on a wall in the space where the furnace is located or a utility room or electrical panel (must not cover obstruct the visibility of circuit directory) predominant R-values of insulation installed in or on ceiling /roof, walls, foundation, (slab, basement wall, crawlspace wall and /or floor) and ducts outside the conditioned spaces; U-factors of windows, and the solar heat gain coefficients (SHGC) of fenestration. The type and efficiency of heating, cooling and service water heating equipment shall also be listed. NOTE: The listing of the electrical panel will not allow you to drill or modify the panel or cover in any way to accomplish this. -IECC R401.3
- A62. Define the location of the thermal envelope. -IECC R105.2.1

Additional Architectural Comments:

STRUCTURAL:

NOTE: On plans, structural design specifications for projects within the City of Louisville shall be: Seismic Design Category: B; Ground Snow Load per [ASCE Hazard](#); Wind Speed per [ASCE Hazard](#); Windborne Debris Zone: C (unless proven); Frost Line Depth: 36".

- S1. Consider all snow loads on the roof; i.e., sliding snow, wind drift, doubled eave loads, unbalanced loads and impact loads. Show these areas and loads on the roof plan drawing by shading or cross-hatching. **Engineer's design criteria shall state a minimum Ground Snow Load, unbalanced loads, sliding and impact loads.** -IRC Table R301.2(1) (amended)
- S2. Provide wall bracing and shear wall schedule.

- S3. Show solid blocking at bearing points on floor joists or rafters. -IRC R502.7
- S4. Justify size and spacing of floor joists, especially those carrying additional loads from partitions and roof loads. -IRC R501.2
- S5. Show T&G underlay-grade plywood and nailing schedule for subfloor if there is not additional particleboard. -IRC R503.2
- S6. Show size, spacing and direction of ceiling joists in all rooms. -IRC R106.1.1
- S7. Show roof sheathing rating and nailing schedule as per engineering design, or minimum 7/16", 24/16 rating if no professional design is provided. -IRC Table R503.2.1.1(1) and Table R602.3(1)
- S8. All lumber in contact with concrete or masonry including ledgers, furring walls and structural supports for exterior decks must be preservative treated or naturally durable wood. -IRC R304
- S9. Show grade, species, size, and spacing of wall studs. Specify types of interior and exterior wall surfaces. -IRC R106.1.1
- S10. Exterior walls more than 10' high should be investigated to determine the ability of the studs to resist the required wind loads, combined with any axial loads. (See IBC Section 2306.)
- S11. Show size, slope, spacing, and span of rafters. Justify with Calculations. - IRC R106.1.1
- S12. Show hurricane ties on all rafters and trusses. -IRC R802.11
- S13. All structural Connections need to be detailed and called-out on the plans: Truss-to-plate, truss-to-truss, rafter-to-plate, truss-to-beam, beam-to-plate, beam-to-beam, and beam/truss/rafter-to-column. -IRC R106.1.1
- S14. All structural masonry walls are to be professionally designed in accordance with accepted engineering practice. -IRC R301 Masonry walls not requiring professional design shall be detailed and specified in accordance with IRC R606 for Seismic Design Category B.
- S15. Masonry Fireplaces: Combustible material shall not be placed within 2 inches of fireplace smoke chamber or chimney walls. Combustible material shall not be placed within 6 inches of the fireplace opening. No such combustible material within 12 inches of the fireplace opening shall project more than 1/8" for each 1" distance from such an opening. -IRC R1003.18 and R1001.11
- S16. Masonry Fireplaces: Show fireplace plan and section views. Show vertical and horizontal reinforcing steel. -IRC R1003
- S17. Provide 1/2" airspace at tops, sides, and ends of girders entering exterior concrete or masonry walls unless wood resistant to decay is used. -IRC 304.1

- S18. Chimneys 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 point where the chimney passes through the roof. -IRC R1003.9
- S19. Note on plans: Special inspection is required for field welding and high strength bolting. (2024 IBC, Chapter 17)
- S20. Call out on the cover sheet of the plans, that any field welding or torch work, will require a separate “hot work” permit prior to beginning work. -IFC 105.5.12, IFC 105.5.25, IFC 106.2.1, and IFC Chapter 35
- S21. In specification criteria, state wood species used for structural lumber. Make sure this information matches what is on the plans. -IRC R106.1.1
- S22. All exterior decks that are structurally supported from an existing residential home shall be engineered by a structural engineer that is licensed with the State of Colorado unless the deck is 30” or less above grade. -IRC R507.1 (amended)
- S23. Specify ‘naturally durable wood or wood that is preservative-treated’ for the structural members of exterior decks. -IRC R507.2.1, R304.1, R304.1.2, and R304.1.1
- S24. Specify lumber grade and species in accordance with the IRC span tables for light framing where professional design is not provided. -IRC R502.3, R802.4, and R802.5
- S25. Show size, spacing, spans, and direction of floor joists, beams, girders and posts. -IRC R106.1.1
- S26. Show the framed basements walls floated a minimum of 1-1/2 inches.

Additional Structural Comments:

ELECTRICAL:

- E1. **Note on plans: All electrical installations shall comply with the 2023 NEC and 2024 IECC. Electrical must be supplied to current locations of all gas equipment for future trade out of gas to electric equipment.**
- E2. All receptacles serving kitchen countertops, in garages, baths, basements, and outside receptacles shall be GFCI protected. -NEC 210.8

- E3. Lights in closets must comply with the clearance dimensions of NEC 410.16.
- E4. Electrical panels must comply with NEC 110.26 for 30" width by 36" depth working space and 6'-6" headroom. Show location.
- E5. Show smoke detectors and CO detectors conforming to IRC Section R310 and IRC Section R311, respectively. All levels, all bedrooms, access to all bedrooms and in all rooms with sloped ceilings next to halls serving bedrooms. All detectors shall be hard-wired to power, interconnected to each other, and have battery backup.
- E6. Show at least two outside grade level receptacles – one in the front yard and one in the rear yard. NEC 210.52(E). In addition, reference at deck locations.
- E7. All branch circuits that supply electrical in Kitchens, Family Rooms, Dining Rooms, Living Rooms, Parlors, Libraries, Dens, Bedrooms, Sunrooms, Recreation Rooms, Closets, Hallways, Laundry Areas, and Similar Areas need to be provided with arc-fault protection. Show this on plans. -NEC 210.12
- E8. Carbon Monoxide detectors shall be installed in each habitable level and no greater than 15 feet from the bedroom door or within the bedroom; if a gas fired appliance is used in the bedroom or connected room off of the bedroom; or if a dwelling unit is equipped with a fuel burning appliance. -IRC R311 as amended by state and local authority. Per HB09-1091
- E9. Hot tub and spa installations and location shall comply with NEC Article 680.
- E10. Electrical panels penetrating the garage side gypsum board membrane shall be wrapped with 1/2" gypsum board on the top, bottom, sides and back. - IRC Table R302.6 and R302.5.3
- E11. Two Electric Vehicle Charging stations with a min of 40 amp service is needed in the garage per City Code 17.20.170**
- E12. The electrical panel shall be sized to meet the demands of an all-electric house such as all electric appliances, (2) EV charging stations and future solar panels. Electrical Panels less than 400 Amps must be engineered.**
- E13. Lithium Energy Storage Systems (ESS). Energy storage systems shall not be installed inside the thermal building envelope of a primary residence or Accessory Dwelling Unit (ADU). The ESS shall be installed on the outside of the thermal envelope or in an exterior insulated shed attached or detached to the building envelope to protect from extreme heat and cold. The ESS shall have electrical disconnects within 3 to 6 feet of the ESS. Installation of an ESS in garages that are attached to a residence or ADU must have 1-hour fire rated walls and ceiling and/or an approved Fire Suppression system in the garage. The ESS shall be installed on the wall farthest away from the residence inside the garage. The ESS shall have a**

Heat Detector that is tied into the Smoke Detectors and shall have a flashing light on the battery with the fault. -IRC M1905

- E14. R404.2.1/ R404.2.2** All permanently installed luminaires in habitable spaces or garages, unfinished basements, laundry rooms and utility rooms shall be controlled with a *manual dimmer* or with an *automatic* shutoff control that automatically turns off lights within 20 minutes after all occupants have left the space and shall incorporate a *manual* control to allow occupants to turn the lights on or off

PLUMBING:

- P1. **Note on plans: All plumbing installations shall comply with 2024 IRC.**
- P2. Show location of gas and electrical meters in an area that is protected from snow and ice damage.
- P3. Show tank type water closets with a flow rate of not more than 1.6 gallons per flush. -IRC P2903.2
- P4. Show showerheads with a flow rate of not more than 2.5 gpm. -IRC P2903.2
- P5. Show non-freeze type hose bibs. -IRC P2903.11. Also, show protection of backflow preventers from freezing. -IRC P2902.6.2
- P6. Show a minimum of one 3" vent through the roof. -IRC P3103.2
- P7. Show location of a means for controlling increased pressure by thermal expansion on the culinary water system. -IRC P2903.4
- P8. Show location of access opening to circulation pumps for whirlpool type tubs. **No grouted tile access allowed.** -IRC P2720.1 and NEC 680.73
- P9. Show 21" clearance in front of water closet. Show a full 30" wide finished space for water closet. -IRC P2705.1 and Figure R327.1
- P10. Showers shall be finished to a height of not less than 72 inches above the floor. Material shall be non-absorbent. -IRC R327.2
- P11. Show location of fuel gas water heater and heating equipment. -IRC G2406
- P12. Show a floor drain by the water heater. Show a metal pan under the water heater or steam shower equipment if located on a wood floor. -IRC P2801.5
- P13. State the number of 'backflow preventers' to be installed on the project on the Cover Sheet of the drawings. (Remember to include the lawn sprinkler system, fire sprinkler system, number of boilers, etc.) -IRC P2902

- P14. Two [Residential Water Fixture Count Forms](#) are required, one for existing fixtures and one for the proposed amount of fixtures.
- P15. Recirculating Hot Water Pump Required per IECC R403.5.1.1
- P16. Fire Sprinklers P2904 systems shall be installed by a licensed plumber or home owner and shall have a 1 inch water line from 1 inch meter serving all sprinkler heads. Plumbing plans shall show sprinklers in all locations in dwelling per P2904.1.1 exceptions.

MECHANICAL:

- M1. **Note on plans: All mechanical installations shall comply with the 2024 IRC and the 2024 IFGC.**
- M2. Provide heating facilities capable of maintaining 68° F at a point 36 inches above the floor in all habitable rooms. -IRC R325.8
- M3. Show combustion air for all fuel-burning appliances at a minimum rate of 1 sq inch per 3000 Btu/hour input. The one opening must be in the top 12 inches of the room. Show minimum 1 inch clearance around equipment at sides and rear of the appliance. Show minimum 6 inch clearance in front of the appliance. -IRC G2407.6.2
- M4. Show gas shutoff valves and ensure each gas appliance is provided with a shutoff valve within 6 feet of the appliance. -IRC G2420
- M5. Fuel-burning appliances, including fireplaces, are not permitted to be installed in sleeping rooms, bathrooms, or toilet rooms unless the appliances are direct vent appliances. See IRC Section G2406 for more information and the list of exceptions. **Note: All construction in Louisville is considered “unusually tight construction.”**
- M6. Fuel-fired water heaters shall not be installed in a room used as a storage closet. Non-direct-vent water heaters located in a bedroom or bathroom shall be installed in a sealed enclosure so that combustion air will not be taken from the living space. -IRC M2005.2
- M7. Appliances having an ignition source shall be elevated such that the source of ignition is not less than 18 inches above the floor in garages. Rooms or spaces that are not part of the living space of a dwelling unit and that communicate with a private garage through openings shall be considered to be part of the garage. - IRC M1307.3
- M8. Appliances located in a garage or carport shall be protected from impact by automobiles. -IRC M1307.3.1
- M9. Submit layout plans, design calculations, and product specifications for the radiant heat system. -IRC R106.1.1 and Section M2103. No snow melt tubing or

mesh is permitted in the public right-of-way without a separate permit from the City Engineer.

- M10. Insulate heating trunk and branch supply ducts in unfinished areas, crawl spaces, attics, unheated garages, etc. -IECC R403.3.3
- M11. Vent the clothes dryer to the outside. Maximum length of 4" diameter duct with two 90-degree elbows is 25 feet. -IRC M1502.3 and M1502.4.6.1. Provide makeup air to laundry room if exhausting more than 200 cfm. -IRC G2439.5
- M12. If gas pipe system is over 4 ounces pressure provide a gas piping schematic for the system. Clearly identify the operating pressure, type of piping material, size of the gas pipe, lengths of the piping runs, capacity of each appliance in Btu's/hour or cubic feet of gas per hour, identify the brand and location of each regulator, and venting of each regulator. -IRC R106.1.1. **NOTE: Specify on Cover Sheet of plans that all 2/5 lb. gas pipe system meter sets require prior approval from Xcel Energy.**
- M13. Natural gas service lines shall be no less than 1 inch in diameter. R156-56-709 (3). Note on plans.
- M14. Domestic cooking exhaust equipment shall discharge to the outdoors through a duct. The duct shall have a smooth interior surface, shall be airtight, shall be equipped with a backdraft damper and shall be independent of all other exhaust systems. Ducts serving domestic cooking exhaust equipment shall not terminate in an attic or crawl space or areas inside the building. Make up air is required for all domestic cooking exhaust equipment. -IRC M1503.3 (amended)
- M15. Show how appliance vents will pass through the structure. -IRC R106.1.1
- M16. HVAC Load calculations: Provide whole building load calculations using ACCA Manual J long report. Calculations must show room-by-room calculations. Calculations must reflect the values used in IECC Table R402.1.2 (amended). - IRC M1401.3 and IECC R403.7
- M17. HVAC Duct Systems: Provide at least a single line duct layout with duct sizes and duct type being identified on the plans. Size all duct systems to accommodate air-conditioning. Layout must be submitted and approved prior to calling for the Mechanical Rough inspection, (deferred submittal). This should include fittings and such. -IRC M1601.1 and IECC R403.3.1
- M18. Mechanical Rooms located in the house or basement that are provided with combustion air from the outside will be considered outside the thermal envelope and will need to be insulated as an exterior area from the rest of the home. The room shall be sheetrocked over R-21 Below Grade Walls, R-30 or R-20 & R-5 ci Above Grade Walls, R-38 floors, R-60 Ceiling, a fully gasketed door into the room, water lines insulated, and ducts shall have R-8 insulation. (Unless the use of direct vent appliances are installed, then there is no combustion air required.) - IECC R402.1.6

- M19. Plastic piping. Where plastic piping is used to vent an appliance, the appliance shall be listed for use with such venting materials, and the appliance manufacturer's installation instructions shall identify the specific plastic piping material. The plastic pipe venting materials shall be labeled in accordance with the product standards specific by the appliance manufacturer or shall be listed in accordance with UL 1738. All exhaust plastic vent applications and applications that use positive pressure to push exhaust gasses through any type of a PVC, Plastic Pipe assembly shall be pressure tested at the appliance and the termination on the roof to ensure the exhaust system does not leak using either of the following methods: (1) 10 ft water column above last glued fitting. (2) 5 psi of air and must be inspected to ensure it holds the pressure for 15 minutes. (3) -5 psi vacuum test shall be evacuated of air by a vacuum-type pump to achieve a uniform gauge pressure of -5 pounds per square inch of negative pressure and must hold a -5 psi for 15 minutes. -IRC G2427.4.1

Additional Electrical/Plumbing/Mechanical Comments:

Helpful Links:

<https://coloradochaptericc.org/>

Click on the box for training to show what classes are being offered from the Colorado Chapter of the ICC. This Website has building guides.

www.iccsafe.org

International Code Council – Click the box on the right hand side for job opportunities and code talk. “Click on” bulletin board and type in key words or sections from the codes for a discussion on various topics. •Check out the bookstore for a list of current publications and code related material. “Click on” ES (Evaluation Services) to find a research report on fireplaces, stucco or any other product. Free Codes are also available online from the ICC.

<https://fmac-co.wildapricot.org/>

Fire Marshal Association of Colorado

<https://apps.colorado.gov/dora/licensing/Lookup/LicenseLookup.aspx>

Department of Regulatory Agencies. Check to see if a firm or person is currently licensed or adopted codes and amendments.

www.nahb.org

National Association of Home Builders. Current up to date web site with a wide variety of information such as mold issues, affordable housing, green building practices, ect.

<https://ascehazardtool.org/>

The ASCE Hard tool for Snow load and wind load by Address.

www.strongtie.com

Simpson Strong-Tie connectors for wood construction. Corrosion testing on connectors in contact with preservative-treated wood.

www.usgbc.org/chapters/organizing/colorado.asp
U. S. Green Building Council – Colorado Organizing Group

www.dcat.net
Development Center for Appropriate Technology

www.BuildingGreen.com
Partnership between the Natural Resources Defense Council, Enterprise Foundation, American Institute of Architects and the American Planning Association

www.fpl.fs.fed.us
Forest Service directory for salvaged or recycled materials in each state. There are roughly 1,400 companies around the country that sell salvaged/recycled materials.

<https://www.colorado.edu/ecenter/recycling/recycling/construction-and-demolition-recycling>
University of Colorado Environmental Center
▪ Construction and Demolition Recycling

Typical Permanent Certificate: -IECC R401.3

Address: _____
Date: _____
Registered Design Prof: _____
Builder: _____
Ceiling/Roof Rv: _____
Floor Rv: _____
Above Grade Walls Rv: _____
Below Grade Walls Rv: _____
Perimeter Slab Rv: _____
Crawl Space Walls Rv: _____ Floor Rv: _____
Duct Rv: _____
Fenestration: U-Factors: _____ SHGC: _____
Air Leakage: _____
Heating Equipment AFUE: _____
Cooling Equipment SEER2: _____ Ton: _____
Service Water Heating Equipment: _____
PV System: Array Capacity: _____
PV System: Inverter Efficiency: _____
PV System: Panel Tilt: _____
PV System: Orientation: _____
Energy Rating Index (ERI): Before OPP: _____
Energy Rating Index (ERI); After OPP: _____
Energy Code Edition: _____
Energy Compliance Path: _____
Additional Energy Measures (IECC R408): _____

Solar Ready Zone: Location: _____

Solar Ready Zone: Dimensions: _____

Affidavit:

I (print name) _____ understand that by signing below, I agree that I have noted all the requirements on my submitted set of plans and I acknowledge that failure to do so will result in the plans being returned until such requirements are addressed on the set of plans and additional plan review fees could be added with an additional plan review wait time.

Signature: _____ Date: _____