

# ***Building Code Board of Appeals***

## ***Agenda***

**February 15, 2018  
City Hall,  
Conference Maple  
749 Main Street  
6:30 PM**

- I. Call to Order
- II. Roll Call
- III. Approval of Agenda
- IV. Approval of Minutes
  - January 18, 2018
- V. Public Comments on Items Not on the Agenda
- VI. Regular Business
  - 2018 Board Member Elections
    - Chairman
    - Vice Chairman
- VII. Discussion
  - Link for Free ICC Codes
    - <https://codes.iccsafe.org/public/collections/I-Codes>
  - Development of steering committees and board representatives for areas of interest in the Codes
  - 2018 IRC Plan Review Checklist
- VIII. Update
- IX. Staff Comments
- X. Board Comments
- XI. Date of next meeting
  - Upon request
- XII. Discussion Items for Next Meeting
- XIII. Adjourn

# **Building Code Board of Appeals**

## **Meeting Minutes**

**January 18, 2018**

**City Hall, Council Chambers Room**

**749 Main Street**

**6:30 PM**

**Call to Order:** **Novik** called the meeting to order at 6:32 PM.

**Roll Call** was taken and the following members were present (**Berry** was not yet present until 6:45 PM):

Board Members Present:      Matt Berry  
   Steve Knapp  
   Heidi Tribelhorn  
   Ed Novik

Board Members Absent:      Tom Ramsey

Staff Members Present:      Chad Root, Chief Building Official  
   Elizabeth Schettler, Senior  
   Administrative Assistant

### **Approval of Agenda:**

**Tribelhorn** moved and **Novik** seconded a motion to approve the agenda as prepared by staff. Voice vote. Motion passed 3-0. Board member Berry was not yet present for this motion.

### **Approval of Minutes:**

**Knapp** moved and **Novik** seconded a motion to approve the May 25, 2017 minutes as prepared by staff. Voice vote. Motion passed 3-0. Board member Berry was not yet present for this motion.

**Novik** moved and **Tribelhorn** seconded a motion to approve the November 16, 2017 minutes as prepared by staff. Voice vote. Motion passed 3-0. Board member Berry was not yet present for this motion.

### **Public Comments on Items not on the Agenda:**

None heard.

### **Regular Business:**

2018 Board Members: Reappointments/Vacancy

Staff updates the board that Steve Knapp and Matt Berry have been reappointed for another term. The board does have one vacant position and the City is currently taking applications to fill it.

Designate agenda posting locations for meetings

Staff informs the board that the agenda posting is located at City Hall, the Library Reference Desk, Recreation Center, and the Police Department Building.

**Knapp** moved and **Novik** seconded a motion to approve these agenda posting locations. Voice vote. Motion passed 3-0. Board member Berry was not yet present for this motion.

2018 open government & ethics pamphlet

Staff discusses with the board members the 2018 open government and ethics pamphlet and the requirement the City has to provide the pamphlet at the first 2018 board meeting. Staff also encourages the board to review the pamphlet and ask any questions they may have at the next meeting.

**Discussion Items:**

Adoption of the 2018 IBC, IFC, IRC, IMC, IPMC, IPC, IEBC, IFGC, ISPSC, 1997 Abatement of Dangerous Building Code, 1997 Uniform Housing Code, with local amendments time line of adoption on or before July 1, 2018

Staff tells the board that the City will be moving forward with the 2018 IBC, IFC, IRC, IMC, IPMC, IPC, IEBC, IFGC, and ISPSC. We will be emphasizing extensive public outreach during the building code transition period. Staff discusses adopting the 2018 International Existing Building Code. This adoption benefits existing buildings that may not be up to current code requirements because it was built under an older code adoption. This adoption will give more leniency to existing buildings.

Staff discusses possible amendments for the 2018 adoption. One example of an amendment is not needing a permit for like for like windows. The Department's goal is to adopt the 2018 building codes no later than July 1, 2018. Staff discusses the benefit of adopting the 1997 Abatement of Dangerous Building Code. As of right now, the City does not have a code related process or guide when dealing with a commercial building or housing structure that is deemed "dangerous." This code would provide guidelines and procedures when handling such buildings or structures.

2018 Code adoption study groups

These study groups will be conducted for outreach to the community. We hope that from these study groups, we gain information on what is necessary to change or amend in the 2018 code, and that concerns will be expressed to the department.

Annual contractors meeting

Staff's goal is to have our first local contractor meeting at the end of February. During these meetings, we would like to provide more information about the department and focus on educational training sessions on the changes of the 2018 IRC code.

Changes to the website department page

Staff is in the process of designing a better layout for the building community within the department website. Soon, the goal is to have the inspection list available as well as a functioning QR code that will automatically take an individual to our inspection page on the website.

Policy statements

Staff has been generating new policy statements within the department to create a more consistent, streamlined process for contractors. These policy statements will be found on the department website so that the building community is aware of when these policies are updated.

ID's for field staff members

Staff is interested in creating official City ID's for inspectors. Staff mentions to the board that as of right now, the inspectors do not have any face identification proving he/she is a city employee. Staff is in the beginning process of creating this identification that shows we have permission to be on site for projects.

**Staff Comments:**

None heard.

**Discussion Items for Next Meeting:**

Staff mentions that during the next meeting, election of officers should take place since Board Member Geise was elected Chairman in 2017, and he is no longer apart of the board.

**Adjourn:**

**Novik** moved and **Berry** seconded a motion to adjourn the meeting. Motion passed unanimously by voice vote. The meeting was adjourned at 7:22 PM.



# 2018 INTERNATIONAL RESIDENTIAL CODE

(Revised 2-5-2018)

## Review Checklist to be filled out by Design Professional or Homeowner

Building Permit #: \_\_\_\_\_ Date Plans Dropped off: \_\_\_\_\_

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: \_\_\_\_\_

Elevation: \_\_\_\_\_ Ground Snow Load: \_\_\_\_\_

Roof Exposure: \_\_\_\_\_

Terrain Category: B C Roof Snow Load: \_\_\_\_\_

Soil Bearing Capacity: \_\_\_\_\_

No. Backflow Preventers: \_\_\_\_\_

Zone District: \_\_\_\_\_

Old Town Overlay: Yes or No

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

Plan Check by: \_\_\_\_\_

Started Review: \_\_\_\_\_ Finished Review: \_\_\_\_\_

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This checklist is compiled for plan checking purposes for use by the Division of Building and Life Safety Inspections. **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.** 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 a checklist number to indicate that the items are 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 additional plan review fees may be assessed, with additional wait time of 2-6 weeks.** Any indicated correction not made or construction detail not shown will be assumed to be installed in accordance with the applicable codes.

**GENERAL:**

- G1. Place correct 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 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. 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 areas square footages separately. List the areas of the garage and deck separately. Also 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
- G9. 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.
- G10. Show the 'Limits-of-Disturbance' on the Site Plan including all utility crossings, material storage and stockpile areas, driveways, re-graded areas, proposed landscaped areas, and construction parking areas.
- G11. Show location and type of silt fence for control of polluted runoff (NPDES Ph II).
- G12. 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.
- G13. 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.
- G14. Rock walls greater than 4 feet require engineering.
- G15. Provide certification from an architect or engineer demonstrating that the proposed development is in compliance with the City's Flood Hazard Ordinance, if applicable.
- G16. Show on the Site Plan the location of the construction trash container and portable toilet.
- G17. Show and identify all proposed and existing buildings on the Plot Plan.
- G18. Note the floor elevation for all floors, landings, and decks on plan views and building elevations.

- G19. 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.
- G20. If property is within the Old Town Overlay Zoning District, specify any request for exemptions or bonuses through Planning Division.
- G21. 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.
- G22. Provide a landscaping plan for Planning approval if improvements are proposed. Be sure to include any proposed water features, fire pits, barbecues etc.

Additional General Comments:

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**FOUNDATION PLAN:**

- F1. Verify type of soil at this 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 design of foundations. -IRC R401.4.1
- 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.
- F3. Show footings a minimum of 30 inches below finish grade. -IRC R403.1.4



- 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.
- F6. Show the top of foundation walls a minimum 6 inches above adjacent finish grade. -IRC R404.1.6
- F7. Show minimum ½" foundation anchor bolts embedded minimum 7 inches into the concrete or masonry. Show 3" by 3" by .229" square plate washers for each bolt. Specify type, size and spacing of other bolts or alternate plate fastening methods. -IRC R602.11.1.
- F8. Show minimum 18 inch clearance for wood joists and 12 inches clearance for wood girders in the crawlspace unless proper redwood or pressure treated wood is specified. -IRC R317.1
- F9. Conditioned Crawlspace must show how it meets Code section R 408.3 If venting the under floor : Minimum 1 sq ft for each 150 sq ft of under floor area. One such ventilating 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. -R506.2.3
- F11. Slab-on-grade floors with a floor surface less than 12 inches below grade shall be insulated, R10 @ 2 feet or R15 @ 2 feet for heated slabs. IRC- N1102.2.10
- 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. R405
- F14. Provide a U-FER ground. Note this on foundation plan and in elect. notes. E3608, NEC 250.50.

- F15. Note the elevation of the top of the footings and top of the foundation on foundation and footing plan.

Additional Foundation Comments:

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**ARCHITECTURAL:**

- A1. Dimension the overall length and width of the building.
- A2. Dimension all rooms.
- A3. State the use of all rooms on the floor plan(s).
- 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 R304
- A5. Habitable rooms, hallways, corridors, laundry rooms and basements shall have a ceiling height of not less than 7 feet measured from finished floor to finished ceiling, bathrooms 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 R305
- A6. Dimension all windows and show what area of the window opens.
- 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 R303
- 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 R303
- A9. Show emergency egress for basements with habitable space and each sleeping room: an exterior door or window with a finished sill height within 44" of the floor, minimum net clear operable area of 5.7 sq ft, minimum net

clear operable width of 20" and minimum net clear operable height of 24". Grade floor openings may have a minimum net clear opening of 5 sq ft. - IRC R310

- A10. The operable window area in bathrooms, water closet compartments, and other similar rooms shall not be less than 3 sq ft 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 R303.3
- A11. Required windows shall open directly onto a street, public alley, or through an open porch with a minimum 7 ft ceiling height. -IRC R303.9
- A12. Glazing used in doors and panels of showers and bathtub enclosures and walls enclosing these compartments shall be tempered. -IRC Table R308.4.
- A13. Tempered glass 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 R308.
- A14. Show not less than 1/2 inch gypsum board on the garage side of the wall and 5/8 "types X on ceiling separating a garage and a dwelling. Where the separation is a floor-ceiling assembly, the assembly and the structure supporting the separation shall be protected with not less than 5/8 inch type X gypsum board on the ceiling. -IRC R302.6
- A15. Doors leading from dwellings to the garage shall be 1-3/8" thick solid core or 20 minute rated and must be labeled self-closing and latching On 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 R309.2
- 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 311.7.1

- 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 2-5/8 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 R311.7.8.
- 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 R312
- 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 R311.7.2
- A22. Stairway risers shall not exceed 73/4 inches and tread shall not be less than 10 inches. If open risers are provided, the openings shall be less than 4". IRC 311.7.5.1
- A23. Landings shall have a minimum dimension measured in the direction of travel of 36 inches. —IRC R311.7.6.
- A24. Show 1/2" gypsum board on walls and soffits under a stairway with enclosed accessible space. -IRC R302.7
- A25 Fire block stud spaces at soffits, floor and ceiling joist lines, at 10 ft vertically and horizontally, and 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
- A30. No wood shall be nearer than 8 inches to earth unless separated by concrete at least 3 inches in thickness with an impervious membrane installed between the earth and the concrete. This includes decks and siding. -IRC R317
- A31. 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

- A32. Specify roofing material products. Show roof slope. –IRC Chapter 9 Include drainage.
- A33. Show 30 # felt interlaid with 18” wide strips of felt shingled between each course in such a manner that felt is not exposed to the weather between courses of shakes. Show roof valley flashing minimum 28 galvanized sheet gauge corrosion-resistant metal extending at least 11 inches from centerline each way. Show ice shield extending from the eaves to a point at least 24 inches inside the exterior wall line. -IRC R905.8.7
- A34. Show wood shake exposure per IRC table 905.8.
- A35. Composition shingles shall not be installed on roofs having a slope less than 4 to 12 unless double underlayment is installed in accordance with IRC Section R905.2.2.
- A36. Asphalt shingle, clay and concrete tile, metal shingle, mineral-surfaced roll roofing, slate and slate-type shingle, wood shingle, and wood shake roof materials 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
- A37. 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 M1305.1.4.
- A38. Show cross ventilation for enclosed attics and spaces between rafters for each separate space. Ventilating openings shall be protected against the entrance of rain or snow. The total net free 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: (1) openings are provided in the upper and lower portions of the ventilated space, OR, (2) a 1 perm vapor barrier is installed on the warm side of the ceiling. -IRC R806
- A39. Unvented conditioned attic assemblies and unvented roof assemblies shall comply with R806.5.
- A40. Show a minimum 22" x 30" attic access in a hallway or other readily accessible location. -IRC R807. See M1305.1.3 for access to furnaces and other mech. equipment in attics.
- A41. Provide listing (approval) number for fireplace stove, fireplace insert, or shower steamer appliance. -IRC M1302.1

- A42. Include a cross-section of the firewall for townhouses on "Zero" lot lines. -IRC R302.
- A43. 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 R502
- A44. Show exterior grade plywood or other approved exterior materials for soffits. -IRC R703.
- A45. Exterior siding shall comply with R703. Provide a detail on plans.
- A46. Show 24-inch on-center blocking for vertical siding. -IRC Table R703.4 footnote J
- A47. Provide an energy conservation analysis and the following information on the plans R Values, U factors and solar heat gain coefficients, area weighted U factor, mechanical system design, mechanical and service water heating systems and equipment size and efficiencies, equipment and system controls, duct sealing and piping insulation and air sealing details. N1001.5 Show all "R" or "U" values on the drawings and which performance path.
- A48 Stair tread nosing: The radius of curvature at the leading edge of the tread shall be no greater than 9/16 inch (914.3 mm). A nosing not less than 3/4 inch (19 mm) but not more than 1 1/4 inches (32 mm) 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 (9.5 mm) between two stories, including the nosing at the level of floors and landings. Beveling of nosing shall not exceed 1/2 inch (12.7 mm). 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 (0.51 rad) from the vertical. R311.7.5.3
- A. A nosing is not required where the tread depth is a minimum of 11 inches (254 mm).
- B. The opening between adjacent treads is not limited on stairs with a total rise of 30 inches (762 mm) or less. Note: This means that concrete stairs, without nosings, must have a tread depth of 11 inches.
- A49. Show a minimum 4-mil polyethylene 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. R703.2**
- A51. Show the location of the clothes washer and dryer. -IRC R106
- A52. Tubs and showers with tiled walls require a Portland cement application, fibered-cement or glass mat gypsum backer; green board is no longer allowed in this application.
- A53. Show on the drawings that inspections are required for all stucco and EIFS systems. Provide product specifications and ICBO Evaluation Report (or equal) for any stucco or EIFS system used. -IRC R109.1.5 ICC ES report.
- 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 R310.2
- A55. All new residential structures in the City of Louisville require fire sprinklers. Note Sprinklers on the plans if new residential structure
- 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 Note: If a fire sprinkler system is required, it may be substituted for the fire assembly of some of the exterior walls per table R302.1
- 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. P2708.1.1. Also, hinged shower doors shall open outward. P2708.1
- A59. List on the cover sheet of the drawings each deferred submittal item IE: fire sprinkler submittal, truss details, radiant heat submittal, 2 lb. gas

pipng schematic, stucco/EIFS submittal, factory-built fireplace product information, and Planning Department items, **siding details**, etc. -IRC R107 Need to get approval with the building official as far as deferred submittal. Maybe require a separate form be submittal to Building Official to sign off on.

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. R312

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 coefficient of windows. 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. IRC N1101.14

A62. Define the location of the thermal envelope.

A63. Note all interior and exterior wall bracing and hold downs.

Additional Architectural Comments

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**STRUCTURAL:**



Note: On Plans Note that City of Louisville is Seismic Design Category B, Snow Load of 30 Lb psf, Wind Load of 115 mph 3 sec Exposure B, Frost Depth of 30",

- 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 ground snow load, roof snow load, unbalanced loads, sliding and impact loads.** –IRC R301.1
- S2. Provide wall bracing and shear wall schedule.
- S4. Show solid blocking at bearing points on floor joists or rafters. –IRC R502.7
- S5. Justify size and spacing of floor joists, especially those carrying additional loads from partitions and roof loads. –IRC R501.2
- S6. Show T&G underlay-grade plywood and nailing schedule for subfloor if there is not additional particleboard. –IRC R503.2
- S7. Show size, spacing and direction of ceiling joists in all rooms.
- S8. Show roof sheathing rating and nailing schedule as per engineering design, or minimum 5/8", 40/20 rating if no professional design is provided.
- S9. All lumber in contact with concrete or masonry including ledgers, furring walls and structural supports for exterior decks must be preservative treated or foundation-grade redwood. -IRC R317.
- S10. Show grade, species, size, and spacing of wall studs. Specify types of interior and exterior wall surfaces.
- S11. 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 2306.
- S13. Show size, slope, spacing and span of rafters. Justify with Calculations.
- S14. Show hurricane ties on all rafters and trusses. –IRC R802.11.1.
- S15. 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, beam/truss/rafter to column.

- S16. 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 R603.9.5.1 for Seismic Design Category C.
- S17. 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
- S18. Masonry Fireplaces: Show fireplace plan and section views. Show vertical and horizontal reinforcing steel. –IRC R1003
- S19. Provide ½" airspace at tops, sides and ends of girders entering exterior concrete or masonry walls unless woods resistant to decay are used. – IRC 317.
- S20. 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
- S21. Provide a cross-section of the masonry veneer that includes thickness of total masonry, attachment methods, nailing schedules, ledger sizes and attachment methods, furring details, weather-barrier membrane, etc.
- S22. Note on plans: Special inspection is required for field welding and high strength bolting. 2017 IBC, per Chapter 17
- S23. 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 105.6.11.
- S24. In specification criteria state wood species used for structural lumber. Make sure this information matches what is on plans.
- S25. Engineer's calculations on floor radiant heat (L.W. concrete). See differed submittals.
- S26. Call out "naturally durable wood, or wood that is preservative-treated" for the structural members for exterior decks. R317.1.3
- S27. Specify lumber grade and species in accordance with the IRC span tables for light framing where professional design is not provided.

- S28. Show size, spacing, spans, and directions of floor joists, beams, girders and posts.

Additional Structural Comments:

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**ELECTRICAL:**

- E1. **Note on plans: All electrical installations shall comply with the 2018 IRC & 2017 NEC.**
- E2. All receptacles serving kitchen countertops, in garages, baths, unfinished basements and outside receptacles shall be GFCI protected. - IRC E3902
- E3. Lights in closets must comply with the clearance dimensions of IRC E4003.12.
- E4. Electrical panels must comply with IRC E3405 for 30" by 36" working space and 6'-6" headroom. Show location.
- E5. Show smoke detectors conforming to IRC section R314. 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, interconnected, and have battery backup.
- E6. Show at least two outside grade level receptacles – one in the front yard and one in the rear yard. -IRC E3901.7  
Reference at deck locations.
- E7. All branch circuits that supply electrical in bedrooms need to be provided with arc-fault protection. Show this on plans. IRC E3902.11.  
More than just the bedrooms are required to be arc-fault protected.
- 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 if a dwelling unit is equipped with a fuel burning appliance.  
R314 as amended by state and local authority..

Must be located outside of the bedroom not inside the bedroom per the  
HB09-1091

- E9. Hot tub and spa installations and location shall comply with Chapter 42 & NEC 680.
- E10. Electrical panels penetrating the garage side gypsum board membrane shall be wrapped with 1/2" Type X gypsum board on the top, bottom, sides and back. Table R302.6

### **PLUMBING:**

- P1. **Note on plans: All plumbing installations shall comply with 2018 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 R2903.2
- P4. Show showerheads with a flow rate of note more than 2.5 gpm. -IRC P2903.2
- P5. Show non-freeze type backflow preventer hose bibs. -IRC P2902.3.3, P2603.6
- P6. Show all plumbing vents through the roof to be minimum 3" pipe. -IRC P3103.2
- P7. Show location of expansion tank on the culinary water system. -IRC P2903.4
- P8. Show location of access for whirlpool type tubs. **No grouted tile access allowed.** -IRC P2720, E4109.3
- P9. Show 21" clearance in front of water closet. Show a full 30" wide finished space for water closet. -IRC R2705
- P10. Showers shall be finished to a height of not less than 72 inches above the floor. Material shall be non-absorbent. -IRC R307.2
- P11. Show location of 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
- P13. State on the cover sheet of the drawings the number of ‘backflow preventers’ to be installed in the Work. Remember to include the lawn sprinkler system, fire sprinkler system, number of boilers, etc. -IRC P2902

**MECHANICAL:**

- M1. **Note on plans: All mechanical installations shall comply with the 2018 IRC & IFGC.**
- M2. Provide a comfort heating system capable of maintaining 68" F at a point 36 inches above the floor in all rooms. General equipment they cannot be installed in sleeping rooms or bathrooms. -IRC R303.9
- 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 M1701
- M4. Show gas logs and each gas appliance with a shut-off 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 and IMC 303.3 for more information and the list of exceptions. Note: All construction in Park City is “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. 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. -IRC N1103
- M11. Vent the dryer to the outside. Maximum length of the duct with two 90-degree elbows is 15 feet. -IRC M1502.2 Provide makeup air to laundry room. IRC G2439.4  
The makeup air is only required if exhausted 200 cfm or more.
- 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: **Note on cover sheet of plans that all 2/5 lb. gas pipe system meter sets requires prior approval from Excel Energy**
- M13. Natural gas service lines shall be no less than 1 inch (25 mm) in diameter. R156-56-709 (3) Note on plans.
- M14. Required make up air for a hoods that exhausts 400 and greater cfm
- M15. Show how appliance vents will pass through the structure.
- 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 energy analysis (REScheck?).
- 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 a 4-way inspection, (deferred submittal). This should include fittings and such.

Additional Elec/Mech/Plumbing Comments:

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Additional Comments: (see attached sheets)

[www.iccsafe.org](http://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://coloradochaptericc.org/>

Click on the box for training to show what classes are being offered from the Colorado Chapter of the ICC

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

Fire Marshal Association of Colorado

[www.energycodes.gov/rescheck](http://www.energycodes.gov/rescheck)

Download the REScheck program. Louisville Colorado has adopted a minimum standard. You can use this program to see if your plans are in compliance. Please make sure that the values that you use for your windows match up with the windows supplied on the job site (leave the sticker on).

<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](http://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.

[www.cedarbureau.org](http://www.cedarbureau.org)

Cedar Shake and Shingle Bureau. Information on Class A standard for fire retardant roofing products, including alternatives to wood. Impact and wind resistant information.

[www.strongtie.com](http://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](http://www.usgbc.org/chapters/organizing/colorado.asp)

U. S. Green Building Council – Colorado Organizing Group

[www.dcat.net](http://www.dcat.net)

Development Center for Appropriate Technology

[www.BuildingGreen.com](http://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](http://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.

**Typical Insulation Certificate (printed on a 3 3/8" X 2 3/8" Avery 8395 Laser/Ink Jet self-sticking label.)**

Address: \_\_\_\_\_ Date: \_\_\_\_\_  
Registered Design Prof: \_\_\_\_\_  
Builder: \_\_\_\_\_  
Ceiling/Roof Rv: \_\_\_\_\_  
Floor Rv: \_\_\_\_\_  
Regular Walls Rv: \_\_\_\_\_  
Foundation Furred Walls: \_\_\_\_\_  
Crawl Space- Walls: \_\_\_\_\_ Floor: \_\_\_\_\_  
Perimeter Slab Rv: \_\_\_\_\_  
Duct Rv: \_\_\_\_\_  
Window U: \_\_\_\_\_ SHGC: \_\_\_\_\_  
Heating Equip. AFUE: \_\_\_\_\_  
Cooling AFUE: \_\_\_\_\_ Ton: \_\_\_\_\_  
Service Water Heating Equip.: \_\_\_\_\_  
Other: \_\_\_\_\_

**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. 1652-2013, § 2, 2-18-2014)

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. Also keep in mind that the excavated



materials need to stay in the Flagstaff/Empire Pass development. Show how and where the excavated materials will be separated into top soil and structural fill.

- SR5. Provide with the “mitigation plan” a recycling plan. Keep in mind that as a part of that plan, all wood construction materials that cannot be recycled and reused, must be mulched for ground cover in the development.
- SR6. Provide a plan that shows the location of mine shafts and tunnels as they relate to this site. This would be any mines etc within 200 feet of this lot. See the “map” that is part of “the agreement”.
- SR7. Provide a plan that shows how to mitigate the mine tailings if they are involved with this lot. See the plan that is part of “the agreement”.
- SR8. Provide a letter from the “Master Home Owners Association” showing that they have reviewed the plans.

## **Affidavit:**

**I (PRINT Name), \_\_\_\_\_ understand 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 assessed with an additional plan review wait time not limited to 2-6 weeks.**