

RESIDENTIAL PLAN SUBMITTAL CHECKLIST (For One-and Two-Family Dwellings and Townhouses)

[2012 International Residential Code \(IRC\) & Boulder Revised Code \(BRC 1981\) Title 9 Land Use Code](#)

This checklist outlines the minimum documentation necessary to allow the permit application to be taken in for review. Applicants are required to submit additional information as necessary to clearly demonstrate compliance with all applicable Codes. Please be advised that poor copies or poorly drawn plans will be rejected.

- Completed Building Permit Application Form (one copy): All building permit applications must be accompanied by a completed application form.** Be sure to read the entire application carefully, answer all questions, and fill in *all* required blanks.

The following are minimum requirements for plan sets.

- Sheet Dimensions:** All plan sheets shall be the same size throughout the entire plan set, and of adequate size to clearly convey all information.
- Site Plan – based on a survey - see Survey Handout (three copies):** north arrow,
- All plans shall be drawn to scale.** Plan scale shall be common engineering scale of 1" = 10'. The occasional use of 1/8" = 1', 1/4" = 1' or 1" = 20' is acceptable when all information is clearly conveyed at that scale.
 - All fonts shall be easily readable.
 - All plans shall be clear and legible.
 - Give lot dimensions.
 - Calculate lot area (see [Lot Area Declaration Form](#) & [Survey Information Handout](#)).
 - Show existing and proposed improvements (accessory structures, retaining walls, etc).
 - Indicate distances to property lines from existing and proposed structures.
 - Indicate distances between all structures.
 - Give topographical information / contours. City mapping system topographical information is for general information only; topographical information and contours for your individual lot must be provided by a Colorado licensed surveyor. Depending on the scope of your project, the information may be provided using a boundary survey document (ISP or LSP) or an ILC (See [Survey Information Handout](#) for specific information).

- Provide building height information – show the location and elevation of the low point within 25' of the building, and the location and elevation of the upper-most point of the roof of the resulting building. *Roof, floor, and site (low point) elevations be given in USGS terms, or should be given in terms which are relative to USGS elevations. For example, USGS elevations may be given for both – low point is 5386', upper-most point of the roof is 5412', or building elevations may be clearly connected to site elevations - For example: finished floor elevation of 100' = 5386' USGS, elevation of the upper-most point of the roof is 128' = 5414' USGS, low point within 25' = 5482' USGS.*
- Provide a [Solar Shadow Analysis](#) (two copies – See [Solar Access Guide](#)): May be included on site plan if it does not obscure the site plan, otherwise include on separate sheet(s). If you can clearly demonstrate and document that no new structure or new building element exceeds the height of the 'solar fence', an analysis is not required.
- Provide Bulk Plane information (Where applicable. See [Bulk Plane Handout](#)).
- Show the location and extent of easements.
- Show the location of required off-street parking.
- Show parking access (includes confirmation of existing curb cuts).
- Give the location of water the meter.
- Show the location of existing and proposed utilities.
- Show the location of existing and proposed impervious areas.
- Give the location and description of existing and proposed swales.
- Show the location of sumps or other drainage discharges.
- Indicate the extent of flood zones and regulated wetland areas on the property.

Floor Plans (three copies):

- **All plans shall be drawn to scale.** Plan scale shall be common architectural scales which are suitable and accurately and verifiably relay the data; 1/4" = 1' or 3/16" = 1' for architectural and structural drawings.
- All fonts shall be easily readable.
- All plans shall be clear and legible.
- Provide a dimensioned floor plan of **all** levels, existing and proposed.
- Identify all relevant interior and exterior dimensions.
- Indicate those portions of partially exposed lower levels that contain floor area that contributes to the maximum allowable FAR (Where applicable. [Floor Area Ratio Handout](#)).

- Give room sizes and uses.
- Identify high-volume spaces 16' or greater in height (Where applicable. See [Floor Area Ratio Handout](#)).
- Identify individual rooms and portions of rooms where head height is less than 6' (Where applicable. See [Floor Area Ratio Handout](#)).
- Detail locations and sizes of external openings including windows and doors.
- Give hallway and stair widths.
- Show locations and types of plumbing fixtures, as well as existing and proposed rough-ins.
- Show the location of furnaces, water heaters and any fireplace.
- Give location(s) of electrical services, main and sub-panels. Indicate if feeds are underground or overhead.
- Identify mechanical and plumbing chases.

Building Elevations (two copies):

- Provide two dimensional drawings.
- Show the elevation of the low point within 25' of the building and the elevation of the upper-most point of the roof of the resulting building. Show existing and finished grade (Where applicable. See [Floor Area Ratio](#) and [Side Yard Wall Articulation Handouts](#)).
- Provide Bulk Plane information (Where applicable. See [Bulk Plane Handout](#)).
- Perspective or isometric drawings may be provided as supplemental information only.

Building Cross Sections (two copies): At relevant locations (Stairwells, other high volume spaces, rooms with sloping ceilings, etc).

- Show high-volume spaces 16' or greater in height (Where applicable. See [Floor Area Ratio Handout](#)).
- Show areas where ceiling height is less than 6' in individual rooms and in portions of rooms. (Where applicable. See [Floor Area Ratio Handout](#)).
- Show existing and finished grade (Where applicable. See [Floor Area Ratio](#) and [Side Yard Wall Articulation Handouts](#)).

- Floor Area & Building Coverage Worksheet (one copy):** Applicants for new residential construction and additions in the **RR-1 RR-2, RE, and RL-1** zoning districts, and applicants for new residential construction and additions for single family dwellings in the **RL-2 and RMX-1** zoning districts, including both principal and accessory buildings, are required to complete and submit this worksheet with the building permit application. (See [Building Coverage Handout](#)).

- Lot Area Declaration Form (one copy):** Applicants for new residential construction and additions in the **RR-1 RR-2, RE, and RL-1** zoning districts, and applicants for new residential construction an additions for single family dwellings in the **RL-2 and RMX-1** zoning districts, including both principal and accessory buildings, are required to complete and submit this form with the building permit application.

- Framing Sections (two copies):** Include the size, species, grade, and spacing of framing members, specify connections, dimension footings and foundations, specify roof and wall sheathing, roof covering material and underlayment, wall siding and underlayment, insulation, foundation drainage, and location of grade.

- Landscape Plan (two copies):** For all homes where the valuation of the proposed work exceeds 25% of the county assessor's current building valuation and for all new and replacement homes, show the location of required street trees per BRC 1981 Section 9-9-13. For applications where Green Points are taken for landscaping elements, shading of hardscapes, or surface water management, provide appropriate plans as outlined in the Green Building and Green points Guidelines Booklet. These items may be included on the site plan if their inclusion does not obscure any other required information.

- Demolition Plans (two copies):** Demolition plans must clearly show which building elements are to be removed, and should show locations of existing plumbing fixtures which are intended to be relocated or removed.

- Engineering required:** All structures must be designed by a Colorado licensed Engineer to resist wind, seismic, and gravity loads. **(IRC R301.2.1.1)**

- Fire-resistive assemblies:** Provide copies of rated assemblies for walls within 5' of a property line, and show how projections within the 5' fire separation distance will be protected on the underside. **(IRC R302.1 & Table R302.1)**

- Garage/house separation (two copies):** Detail the required separation between the garage and house, detail required opening protection and show 26 gauge ducts in the garage with no openings. **(IRC R309.1 & R309.2)**

- Window information (two copies):** Indicate the size and type of each window on plans, show where safety glazing will be used, indicate which windows will meet emergency escape and rescue (egress) requirements, Detail window wells at egress windows, and detail how windows will meet the provisions of R613 if the operable opening is less than 24" above the finished floor and more than 72" above the surface below. **(IRC R303.1, R308.4 R310.2 R311, R613)**
- Landings at doors (two copies):** Show a floor or landing on each side of each exterior door. **(IRC R311.4.3)**
- Stair details (two copies):** Provide adequate stair details, including but not limited to: headroom requirements on stairs and landings, rise and run, riser opening size if any, handrail and guard configuration. **(IRC R311.5)**
- Smoke alarms (two copies):** Show the location of smoke alarms. Smoke alarms for remodel, alteration, and addition projects must be hardwired and interconnected as required. **(IRC 313.1, 313.2, 313.2.1 & 313.3)**
- Rated dwelling unit separations (two copies):** For dwelling unit separations, provide a section of the structure detailing the 1-hr. rated wall assembly or rated floor-ceiling assembly between the units. Provide copies of all listed fire-resistive assemblies to be used. Include information showing that the required minimum sound transmission class (STC) rating of 50 is achieved with the chosen assembly. **(IRC R317.1)**
- Common walls at townhouses (two copies):** At the common wall for townhouses, each townhouse shall have a 1-hr. wall assembly. Or, clearly demonstrate how the 2-hr fire-resistive exception will be met. Provide copies of all listed fire-resistive assemblies to be used. Include information showing that the required minimum sound transmission class (STC) rating of 50 is achieved with the chosen assembly. **(IRC R317.2)**
- Soils reports (one copy):** A soils report is required for all new homes and for work on structures which involve additions to, or significant alterations of existing foundations which are located in properties containing steep slopes (see BRC 1981 9-12-12) or soils with mass movement potential. Development constraint lots require engineered grading and drainage plans in most cases. (Please visit the Planning and Development services office for more information on your property). **(IRC R401.4)**
- Footing and foundation design (two copies):** All footings and foundations for areas in excess of 150 square feet shall bear the seal and signature of a Colorado licensed engineer, except for detached accessory structures which are not intended for human habitation. **(BRC 1981 10-5-2 (l) (2) (a) & (b) & R404.1.3.)**

- Under-floor access and venting (two copies):** Detail under-floor access points. Access openings shall be a minimum of 18" x 24" (without equipment) or 22" x 30" (with equipment) and must always be large enough to permit removal of the largest piece of mechanical equipment. Detail the size and location of under-floor ventilation openings, or clarify how the under-floor area will meet the requirements of Section R408.3 for unvented crawl spaces. **(IRC R408.1, R408.2, R408.4 & IMC 306.4).**

- ICF's (two copies):** All proposed Insulated Concrete Form (ICF) systems require additional documentation to be provided at the time of application which includes, but is not limited to: manufacturer's information and the ICC Evaluation report for the product system chosen if available. Stamped structural plans must include all intended ICF applications.

- Conventional roof framing (two copies):** Provide a roof framing plan showing the size, grade, span and spacing of all roof and ceiling members. Also include ridges and valleys, roof pitches, and location and size of skylights. **(IRC R802.1 & R802.3)**

- Truss framed roofs (two copies):** For complex roofs, stamped manufacturer's truss drawings for each type of truss must be provided and keyed to the roof framing plan. **(IRC R802.10)**

- Attic access and roof venting (two copies):** Detail the readily accessible location of the 22" x 30" attic access, minimum 30" clear headroom in areas that exceed 30 sq. ft. Specify ventilation for enclosed attics and roof spaces, or show how a conditioned attic assembly will meet conditions 1,2, and 4 of R806.4 **(IRC R806 & R807)**

- Structural Insulated Panels (SIP's):** All proposed SIP wall and roof systems require additional documentation to be provided at the time of application which includes, but is not limited to: manufacturer's information and the ICC Evaluation report for the product system chosen. Stamped structural plans must include all intended SIP's applications, and include panel location and attachment details.

- Heating and cooling equipment sizing (two copies):** For any new mechanical heating and/or cooling system in any structure, or for any system which has been replaced in additions/remodels, please provide ACCA approved documentation demonstrating proper equipment sizing per ACCA Manuals J and S (Per **IRC M1401.3**) proper duct sizing and grille configuration where applicable per ACCA Manuals D and T (Per **IRC M1601.1**). This includes, but is not limited to: hydronic or forced-air systems of any configuration, and ground, water, and air source heat pumps; but does not include simple furnace or boiler replacements or extensions of existing hydronic or ducted systems, the installation of whole-house fans, stand-alone electric baseboard systems, or evaporative coolers with a single supply duct.

- Roof coverings (two copies):** Indicate the roof covering material, slope and underlayment. See local amendments regarding wood roofing materials. Wood shakes, shingles and other wood roof covering materials are generally prohibited. **(IRC R904 & BRC 1981 10-5.5-2 (h) & (i))**
- Location of equipment (two copies):** Show the location of water heaters and furnaces. **(IRC G2406)**
- Electrical service (two copies):** Show the location and size of electrical service. **(IRC E3502)**
- Concrete encased electrodes (two copies):** Show the location of the concrete encased electrode (foundation electrical service ground) for electric service on foundation plan. **(IRC E3508.1.2)**

The following documents are required when circumstances warrant:

- Plumbing Fixture Count Form (one copy):** If there is any change in the number, type, or location of plumbing fixtures, if new plumbing roughs will be a part of the scope of work, or if fixtures are to be set on unused existing rough-ins.
- Stormwater & Flood Management Plant Investment Fee Calculation Form (one copy):** For all new construction, additions to existing structures and/or additions of new impervious (hard surface) areas on your property such as new sidewalks, driveways, concrete and flagstone pavers, etc.
- Green Building and Green Points (GBGP) Application (one copy):** For all [new construction](#), as well as [additions and remodels](#) of more than 500 square feet (for projects which are additions and remodels, square footage is considered cumulatively). There are separate GBGP applications for [new dwellings](#) and [additions/remodels](#). Be sure that you have the correct application. Be sure to include a copy of attachment 'C' with your application. Consult the [Green Building and Green Points Guideline Booklet](#) for more information.
- Demonstration of International Energy Code Compliance (one copy):** Must submit for any increase of conditioned space, even if no additional floor area is added. This includes documentation of energy audits, blower door tests, and HERS rating certificates when required.

- Growth Management Allocation / Compliance with inclusionary housing (one copy):** For all new and replacement homes. Please be advised that a 'demolition' Allocation (a Growth Management Allocation which is for the replacement of a demolished home) requires the signatures of parties outside of the City government (to obtain the demolition permit), which take additional time to procure – see the demolition application form. Please also be advised that an agreement for meeting city affordable housing requirements must be in place before a Growth Management Allocation can be issued and may take one to four weeks, depending on the size and complexity of the project. Contact the City Housing Division, 303-441-3157 for more information.

- Development Excise Tax Form (one copy):** For all new homes built on vacant lots, or when additional dwelling unit(s) are being added to an already developed lot.

- Impact Fee Form (one copy):** When new square footage is being added to an existing dwelling.

- Copies of Prior Approvals/Variances (one copy):** Any variance approval, Administrative Review approval, Land Use Review approval, Technical Document Review approval, Landmarks Alteration Certificate, Landmarks Demolition Approval case number, easement vacations, and/or H.O.A. approvals, where appropriate. Provide to-scale copies of all relevant supporting documents.

- Floodplain / Wetland Development Permit (Designated flood zones only):** For projects located within designated floodplains, wetlands, or wetland buffer areas. Separate floodplain permit applications must be **approved prior to** building permit submittal (LUR flood permit cases – work in the Conveyance or high hazard zones, wetlands or wetland buffers) or may be submitted concurrent with building permit submittal (PMT flood permit cases– work in flood zones other than conveyance and high hazard). Check with staff for determination.

- Steep Slope/Geological Constraint Information:** Additional geotechnical, structural, and drainage design by a Colorado licensed professional engineer must be provided for projects in hillside areas and areas identified as having soil instability such as properties with mass movement potential. See 'soils reports' above

I certify that I have reviewed this checklist and have incorporated the applicable requirements into my construction plans for this submittal.

Applicant's signature: _____

Date: _____

Please note: The City of Boulder will periodically adopt and amend updated versions of all Model Codes and the Boulder Revised Code through public process. When this occurs, some of the items in this checklist may be changed or updated, and a new checklist should be obtained from this department. This checklist applies **only** to the requirements of the 2012 International Residential Code as amended (IRC) (BRC 1981 10-5.5), the Green Building and Green Points program (GBGP) (BRC1981 10-7.5) as it applies to structures covered by the scope of the 2012 IRC, relevant portions of the 2012 International Energy Conservation Code as amended (IECC) (BRC 1981 10-7), and BRC 1981 Title 9, and is not a complete or exhaustive list of the requirements of any adopted Code, or of all elements which should be included in a plan set, nor does it contain complete information describing what your permit application must contain to demonstrate compliance with the IRC, IECC, GBGP, or Title 9. Please contact the Planning and Development Services Department for more information.