

July 23, 2023

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Sr Permit Tech/Plan Reviewer Assistant
Building Services
Routt County Regional Building Department

**Reviewed for
Code Compliance**

08/11/2023

Re Comments related to: Building Permit No. PRSF230495

Dear Reviewers,

I wanted to thank you for your time reviewing this project. I have addressed the comments from the review letter dated June 21st, 2023. The original comments are listed below with my responses in **red**. Changes have been clouded Delta 1 on the resubmitted drawings. Please note Building Review items 5,6, and 15 will be provided by the Structural Engineer under separate cover.

Respectfully



Kenny Davis, Principal
Studio QUAD
5690 Webster
Arvada CO 80002

Building Code Review (Reviewed By: Todd Carr)

Comments: See comments and conditions of approval added, thank you.

1. Sheet G1.0 Code summary: This project does meet the requirements of a residential dwelling under the 2018 IRC chapter 3, as all dwelling accommodations have to be within one building meaning sleeping, dwelling, sanitation and cooking would have to be in each building per chapter 3. Please insert for Occupancy Type the following: Residential Accessory Use Dwelling Per Routt County Planning SUP PL20210018.

Occupancy type information has been corrected on sheet G1.0

2. Occupant Load Information Per PL20210018 is as follows: Three Guest Cabins, each cabin is allowed two guests at a time, for a maximum of 6 occupants total sharing the bathroom and kitchen area in the main level of the barn. Please Insert the Following: A Secondary Dwelling to be built per the 2018 IRC will be a stand-alone R-3 Occupancy.



Occupancy load information has been corrected on sheet G1.0

3. Your work description states "Construction of two guest cabins and monitor barn". Please provide us information on the site plan as to which two cabins your going to construct at this time under this permit, as your plans show 3 cabins not two, so we need to know which cabin your not building on the architectural and site plans. Also the barn is not a monitor barn but rather a Barn with a shared kitchen and bathrooms associated with the use of the cabins, plus an SDU above the main floor per the approved SUP Planning Application. Are you building all of this under this permit, meaning construct the barn, construct the kitchen and bathrooms and dining area, and also the SDU above, as currently we see no details about building an SDU. Please provide back a very thorough phasing plan of what you intend to build under this permit.

This permit is to be for a total of 4 structures, one barn with a second level SDU, and three cabins with storage lofts. The areas are to be:

Barn - Main Level	1,682 GSF
Barn - Loft (SDU)	714 GSF
Cabin - Main Level	226 GSF x 3 = 678 GSF
Cabin Storage Loft	120 GSF x 3 = 360 GSF
Grand Total GSF	3,434 GSF

4. We are currently uncertain about the SDU being included in this permit application or not, however if it is intended to be part of this application it's important for you to understand what is required for Secondary Dwelling Units per the 2018 IRC.

a. A Secondary Dwelling unit is considered a stand alone dwelling in the IRC, SDU's are limited to 800 Square Feet in total living space per the County Planning Department, also Secondary Dwellings must be separated from any other dwellings with a minimum of a 1-hour fire rated assembly per the IRC and designed under Section R302.3 which is a Two-Family fire separation section. A Secondary Dwelling must have it's own personal sanitation and kitchen area, meaning it cannot be a shared use, so the SDU must have it's own full bathroom, and kitchen area, see sections below. The Secondary Dwelling also will require it's own dedicated ingress/egress door or protected egress corridor that is rated to 1-hour that will allow direct entry into the SDU and direct egress from the SDU to the exterior. This can be achieved by constructing a 1-hour corridor from the exterior wall to the staircase and rate the stair case as well, any door leading from this protected corridor into the common shared space will need to be rated at 1-hour with self closing hinges and latches. Other options are build an exterior staircase that leads up to the SDU on the second floor. Currently the plans show now footprint of the SDU at all, no fire separations, or other important information. The SDU area will require a blower door test upon completion, that can only test the square footage of the SDU, condition added to permit that this must be done prior to full CO.

R306.1 Toilet facilities.

Every dwelling unit shall be provided with a water closet, lavatory, and a bathtub or shower.

R306.2 Kitchen.

Each dwelling unit shall be provided with a kitchen area and every kitchen area shall be provided with a sink.

R302.3 Two-family dwellings.

Dwelling units in two-family dwellings shall be separated from each other by wall and floor assemblies having not less than a 1-hour fire-resistance rating where tested in accordance with ASTM E119, UL 263 or Section 703.3 of the International Building Code. Fire-resistance-rated floor/ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend from the foundation to the underside of the roof sheathing.

Exceptions:

1. A fire-resistance rating of 1/2 hour shall be permitted in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13.
2. Wall assemblies need not extend through attic spaces where the ceiling is protected by not less than 5/8-inch (15.9 mm) Type X gypsum board, an attic draft stop constructed as specified in Section R302.12.1 is provided above and along the wall assembly separating the dwellings and the structural framing supporting the ceiling is protected by not less than 1/2-inch (12.7 mm) gypsum board or equivalent.

R302.3.1 Supporting construction. Where floor assemblies are required to be fire-resistance rated by Section R302.3, the supporting construction of such assemblies shall have an equal or greater fire-resistance rating.

The second level of the barn is now shown as a proper SDU with a kitchen, full toilet, and a direct 1hr rated exit corridor to the exterior of the barn. The extents of the rated walls have been added and a detail of the rated wall assembly has been added to Sheet A1.1

The rated portion of the exit corridor is supported by the timber frame giving a 1 hr rating to the elements supporting the rated GB ceiling consisting of 5/8" type X GB attached directly to the underside of the timber floor framing.

5. You have not listed the approved submitted soils report in the design information. Please state you have reviewed report 22-12786 dated 11/18/2022, also you should list out the bearing capacities from this report stating your design is in accordance with the values listed. Maximum 2500 PSF and minimum deadload of 600 PSF.

Also you list ground snow load values, but you did not provide your designed roof snow load value, please list this. **TO BE PROVIDED BY STRUCT**

6. Please provide us with structural calculations that were used from the building plans to transfer all vertical and lateral loads to the foundation plans. **TO BE PROVIDED BY STRUCT**

7. See comments provided on Secondary Dwelling Unit requirements for having a 1-hour fire separation between the SDU and all common shared spaces. This requires a 1-hour floor ceiling separation, or 1-hour wall construction, plus any supporting construction members have to be rated as well, so elements supporting floor construction. Please show us floor plans that outline the SDU area, add a kitchen area, show us the sleeping room if one exists and a legal Egress Window must be labeled on the plans, plus a rated entry stair and corridor to the exterior.

The second level of the barn is now shown with a kitchen, toilet, and rated exit directly to the exterior. The level 2 egress window has been called out of Sheet A1.1

8. Sheet A1.1 missing dimensions on the floor plans for room sizes L and W not shown.

Dimensioned floor plans have been added to sheet G1.0



9. R-30 does not meet the energy code, please change to R-38 on floor insulation on sheet A3.1

The floor insulation note on sheet A3.1 has been corrected

10. Sheet A3.1 Cabin Loft: Please let us know the intended use, is this for storage only or are you wishing to use this as sleeping area. Sleeping use would have to be designed at minimum in accordance with Appendix Q Tiny Home Building Code appendix. You will have to review Appendix Q and see if you can meet the code requirements for a lofted sleeping area per Appendix Q, if you can then I will accept that as a code approved sleeping loft, but please state and show how all code sections will be met.

The Cabin lofts are intended for storage only

11. R-38 required on sheet A3.2

The floor insulation note on sheet A3.2 has been corrected

12. Sheet A3.2 Please list approved roof insulation that will be installed on each cabin, currently this information is not provided to us for review, R-49 is required.

The cabins will be constructed with a roof made of 7 ¼" Raycore SIP, R-52 and this has been added to the cabin details.

13. Sheet A3.2 barn wall and eave drawings. Were missing R-Values for all products in foundation, underslab, walls and roof, please add R-values.

Insulation products and R values have been added to the details on sheet A3.2

14. All windows must have a U-factor of .30 or less, please change this on window schedule on sheet A4.0

The U values shown in Window Schedule / A4.0. have been corrected

15. The Barn Plan provided by Timber Frame Headquarters do not reference any Code Information, so they don't mention what code the barn was designed under, no structural design information at all for wind and snow loads, or live or dead loads, some of the sheets are marked up with red ink recommendations as well but no Engineers Stamp is on the plans. Please either have your Structural Engineer who designed your foundation to review these plans and provide us a letter stating he has reviewed the plan in accordance with the 2018 IRC/IBC and per design standard information found on his foundation plans, or have the company or person responsible for the drawings add this information and details to the plans and resubmit along with their calculations. **TO BE PROVIDED BY STRUCT**

Planning Review (Reviewed By: Alan Goldich)

Comments: These structures were reviewed and approved through Special Use Permit PL20210018.



1. General locations and sizes match what was approved. There are several items that need addressed prior to Planning signing off. This includes an accurate property description, showing existing and proposed grades on elevations, dimensions of floor plans need to be added, confirmation of the size of the secondary dwelling unit, and correction of the project description. See corrections for more details.

The project description has been corrected. The existing and proposed grades have been added to the building elevations. Dimensioned floor plans have been added to sheet G1.0, The SDU size and details have been added to the drawing set.

2. The survey submitted shows property not owned by the applicant. Please provide an accurate survey of the property that shows only the land owned by the applicant.

A current survey has been provided in the drawing set.

3. Existing and proposed grade need to be shown on the elevations of all structures.

Existing and proposed grades have been added to the barn elevations. The cabins will sit on posts and do not change the existing grades.

4. Please add dimensions to floor plans.

Dimensions have been added to the Architectural floor plans.

5. The living area in the barn is meant to be a secondary dwelling unit. Secondary dwelling units are limited to 800 sq ft of habitable space. The habitable space of the barn appears to exceed 800 sq ft. Please confirm. Please correct project description to include three cabins.

The details of the SDU have been added to sheet G1.0 and A1.1. The project description has been corrected.

GIS Land Development Review (Reviewed By: Lauren Wade)

Comments: Addressing cannot be assigned until confirmation of the barn as a secondary unit. Primary vs Secondary structure will determine whether the barn receives a unit and subsequently, the unit designation of the three cabins.

Comment Noted. The barn has been modified to incorporate an SDU and the related fixtures and rated assemblies.