



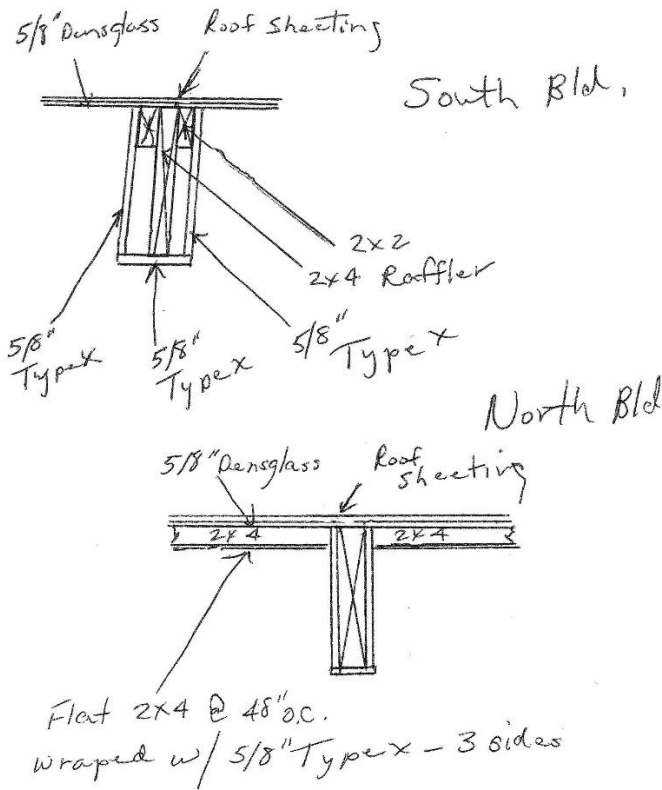
RE: Permit Application # PRMU20221555
Copperberry Condominiums ~ Fire Details Clarifications
City of Puyallup

To whom it may concern,

Items listed below are in reference to the Copperberry Condominiums for clarification of the fire ratings and requirements and solutions to onsite deficiencies brought to our attention by the builder.

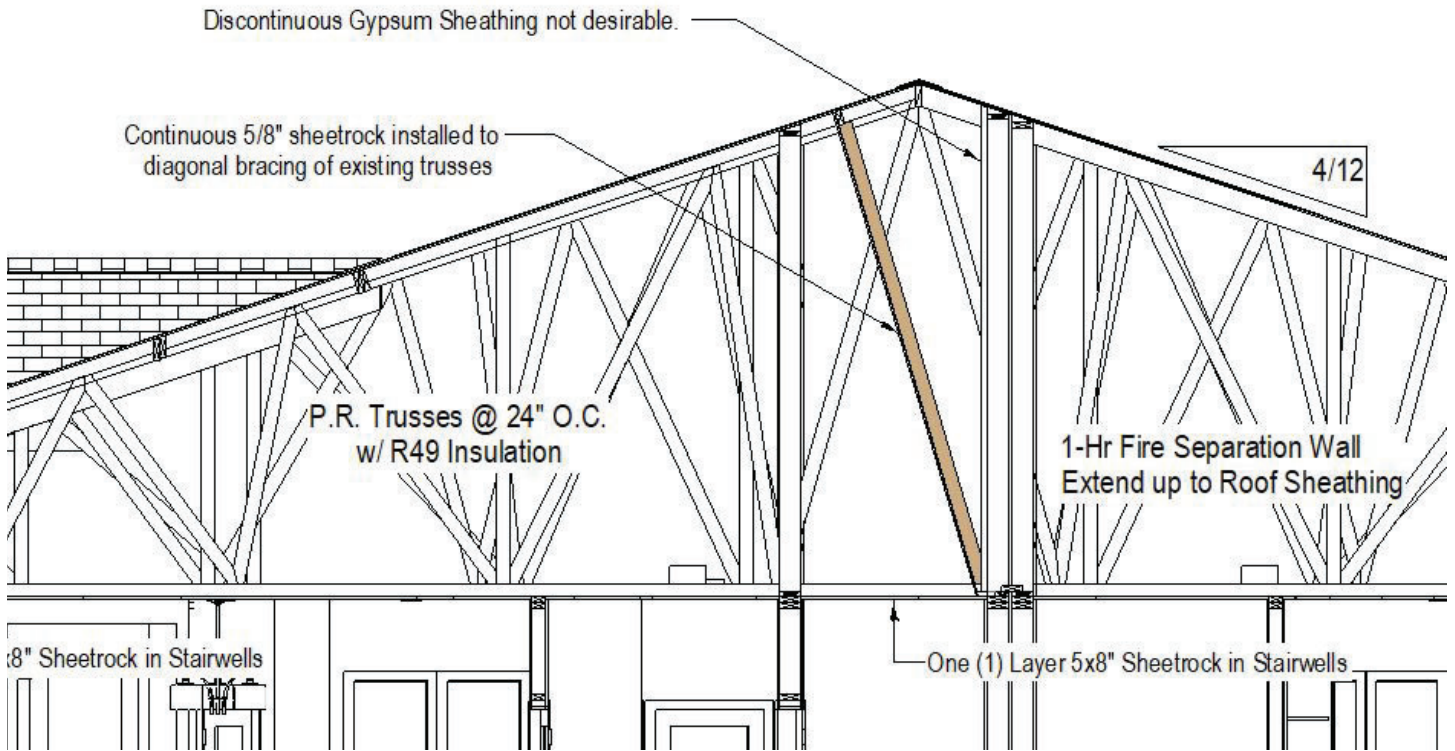
1. An area of the roof adjacent to the partywalls required the roof to be fire rated and sheetrock installed between the top chords of the trusses suspended by 2x2's. It has been brought to our attention the sheetrock does not extend fully between the truss chords on the sides and has shifted down from the ridge on both sides about two inches.

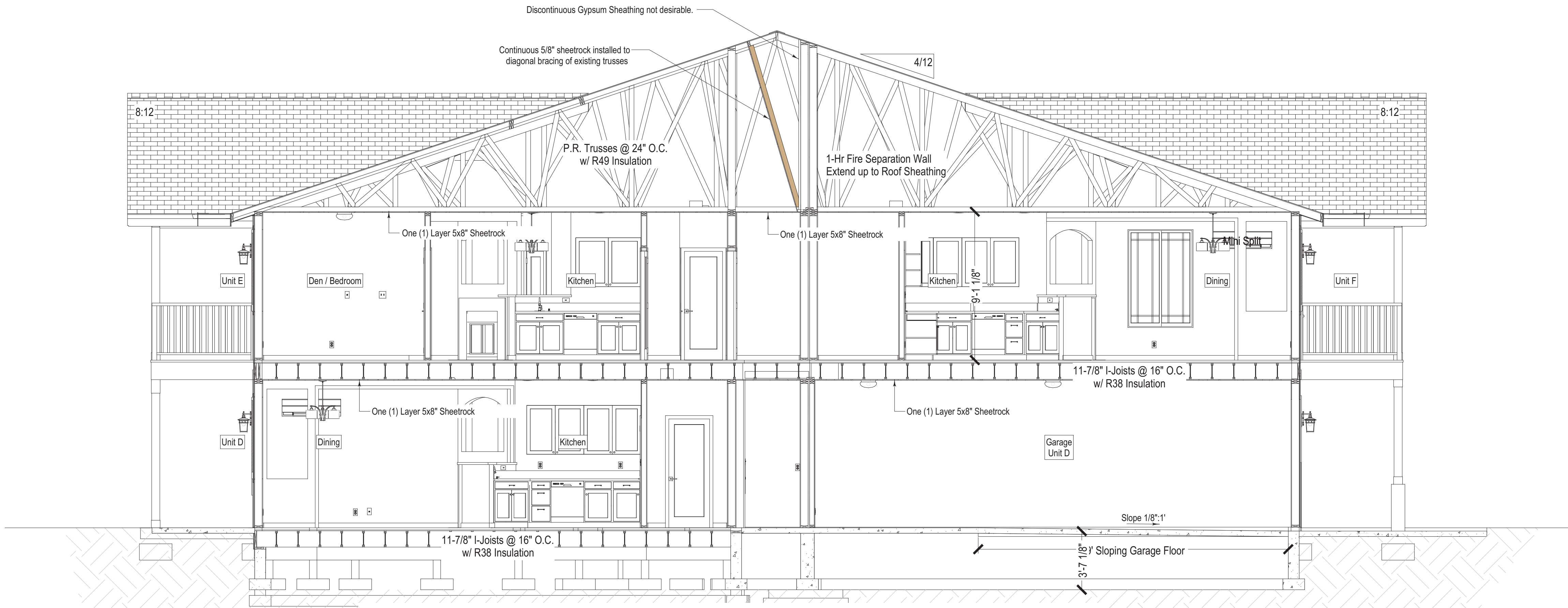
Solution please follow the attached detail to further fire rate and protect the framing elements in the case of a fire. The builder shall add additional 2x4's nailed between the truss chords as a nailer to attach new 5/8" sheetrock below with tight fitting seams, then wrap the top chord of the trusses. This will add an additional 40 minutes of burn rating to the unprotected 2x2's.



2. The hallway / stairwell is required to be fire rated and extend to the underside of the roof sheathing. The walls line up with the truss chords in most areas, however the truss uprights in the stairwell are not aligned with the partywall below and offset about an inch and a half (1-1/2"). This is not ideal as the sheetrock is discontinuous and is considered a weak link in the event of a fire emergency.

Solution; The builder shall block both top and bottom of the diagonal bracing and continuously sheet the diagonal bracing as shown in the attached plans view.





Cross Section B - PHS21.136 - Bill Riley - Copperberry Condominiums - South Building
Scale: 1/4 in = 1 ft

711.2.4.3 Dwelling units and sleeping units.

Horizontal assemblies serving as dwelling or sleeping unit separations in accordance with Section 420.3 shall be not less than 1-hour *fire-resistance-rated* construction.

Exception: *Horizontal assemblies* separating *dwelling units* and *sleeping units* shall be not less than ½-hour fire-resistance-rated construction in a building of Types IIB, IIIB and VB construction, where the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1.

3. In addition, our original approved details were conservative having the fire rating on the subfloor. We have found this option to be a great cost to the client and not required by the code.

Section 711.2.4.3 Dwelling units and sleeping units, has an exception we would like to use, and having automatic sprinkler systems only require the buildings to have a 30-minute rated assembly. The units, being sheet rocked with 5/8" type X sheetrock on the walls and 5/8" type X board on the ceilings, satisfies the code requirements and exceeds the code requirements. See table 722.6.2 (1) & 722.6.2 (2) below.

TABLE 722.6.2(1) TIME ASSIGNED TO WALLBOARD MEMBRANES^{a, b, c, d}

DESCRIPTION OF FINISH	TIME ^e (minutes)
3/8-inch wood structural panel bonded with exterior glue	5
1 1/2-inch wood structural panel bonded with exterior glue	10
1 7/8-inch wood structural panel bonded with exterior glue	15
3/8-inch gypsum wallboard	10
1/2-inch gypsum wallboard	15
5/8-inch gypsum wallboard	30
1/2-inch Type X gypsum wallboard	25
3/4-inch Type X gypsum wallboard	40
Double 3/4-inch gypsum wallboard	25
1/2-inch + 3/4-inch gypsum wallboard	35
Double 1/2-inch gypsum wallboard	40

For SI: 1 inch = 25.4 mm.

- a. These values apply only where membranes are installed on framing members that are spaced 16 inches o.c. or less.
- b. Gypsum wallboard installed over framing or furring shall be installed so that all edges are supported, except 1/2-inch Type X gypsum wallboard shall be permitted to be installed horizontally with the horizontal joints staggered 24 inches each side and unsupported but finished.
- c. On wood frame floor/ceiling or roof/ceiling assemblies, gypsum board shall be installed with the long dimension perpendicular to framing members and shall have all joints finished.
- d. The membrane on the unexposed side shall not be included in determining the fire resistance of the assembly. Where dissimilar membranes are used on a wall assembly, the calculation shall be made from the least fire-resistant (weaker) side.
- e. The time assigned is not a finished rating.

TABLE 722.6.2(2) TIME ASSIGNED FOR CONTRIBUTION OF WOOD FRAME^{a, b, c}

DESCRIPTION	TIME ASSIGNED TO FRAME (minutes)
Wood studs 16 inches o.c.	20
Wood floor and roof joists 16 inches o.c.	10

For SI: For SI: 1 inch = 25.4 mm.

- a. This table does not apply to studs or joists spaced more than 16 inches o.c.
- b. All studs shall be nominal 2 x 4 and all joists shall have a nominal thickness of not less than 2 inches.
- c. Allowable spans for joists shall be determined in accordance with Sections 2308.4.2.1, 2308.7.1 and 2308.7.2.

Having two layers of 5/8" Type X sheet rock, plus the wood stud wall, totals a burn time of an hour and forty minutes.

Conclusion: The Copper Berry Condominiums Only Require one layer Type X sheetrock to satisfy the fire requirements.

4. Per the builder there are areas of the framing originally calling out lining the bays with gypsum to contain the ductwork through the floor system. Some of those areas are too tight or congested with other utilities.

Solution: The builder shall fill those bays with Rock wool insulation the length of the joist or stud bays prior to cover with 5/8" Type X sheet rock. Installation of Rock wool insulation provides and additional 15 minutes of burn time

TABLE 722.6.2(5) TIME ASSIGNED FOR ADDITIONAL PROTECTION

DESCRIPTION OF ADDITIONAL PROTECTION	FIRE RESISTANCE (minutes)
Add to the fire-resistance rating of wood stud walls if the spaces between the studs are completely filled with glass fiber mineral wool batts weighing not less than 2 pounds per cubic foot (0.6 pound per square foot of wall surface) or rockwool or slag material wool batts weighing not less than 3.3 pounds per cubic foot (1 pound per square foot of wall surface), or cellulose insulation having a nominal density not less than 2.8 pounds per cubic foot.	15
<small>For SI: 1 pound/cubic foot = 16.0185 kg/m³.</small>	



Infill Joist Bays, packed with rock wool insulation prior to 5/8" sheet rock ceiling



Infill Stud Bays, packed with rock wool insulation prior to 5/8" sheet rock and fire tape finish



Infill Joist Bays, packed with rock wool insulation prior to 5/8" sheet rock ceiling

Please see attached photos of the areas in question as well as Section B with additional information added / clarified.

You may contact me at the address below if you have any questions or need additional information.

Sincerely,

John Gabriel Spruell, Owner
Pacific Home Source LLC

6805
REGISTERED
ARCHITECT
R. Hendershott
ROBERT W HENDERSHOTT
STATE OF WASHINGTON