



## LATERAL BRACING REQUIREMENTS FOR MINOR ADDITIONS AND DORMERS IN EXISTING 1 & 2 FAMILY CONSTRUCTION

### GENERAL:

The following outline is to help clarify City requirements when minor additions or dormers are added to existing 1 & 2 family construction. The assumption is that minor additions in standard wood frame structures will not affect the lateral systems sufficiently to require strengthening. Unless specified, calculations are not required to demonstrate that such minor additions will meet the lateral load design requirements of the Oregon Residential Specialty Code or Oregon Structural Specialty Code (hereafter referred to as "Codes").

This handout will define what additions can be considered "minor". For the purpose of this document, the term "additions" includes all work that was not a part of the structure as originally built. Additions exceeding the limitations and criteria below will require the existing lateral support system which is taking additional load to be upgraded to meet current Codes. All new construction, all vertical members and any lateral members not specifically excluded by this paper shall meet current Codes.

### INITIAL CRITERIA:

The structure must meet *all* of the following questions with a "yes" answer in order to qualify for reduced lateral requirements to the existing structure.

- Is the structure of typical wood frame construction?
- Do the exterior walls of the existing structure before remodeling have a maximum of approximately 20% of their area in window or door openings?
- Are all new vertical loads supported and detailed per current Codes?
- Does structure have a standard foundation? (No piles, steeply sloping lot).
- Is structure covered under the Oregon Residential Specialty Code?

### REDUCED LATERAL REQUIREMENTS:

If the structure meets *all* Initial Criteria questions above with a 'yes', answer the Additional Criteria questions below for the category of addition listed. If all the additional questions of a given category of remodel can be answered yes, then calculations demonstrating the adequacy of the existing structure or the addition to meet the lateral load design requirements of the codes are not required.

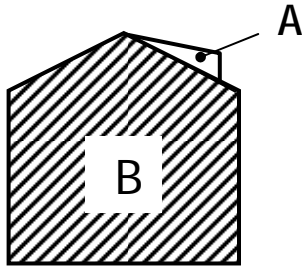
**ADDITIONAL CRITERIA :**

**ATTIC CONVERSION:**

- A-1. Is all work within the existing building envelope?
- A-2. Are added windows and skylights not more than 20% of existing wall or floor area?

**DORMER ADDITION:**

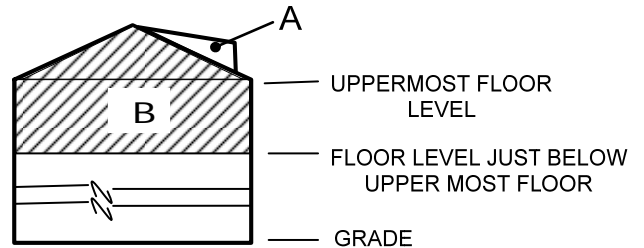
- B-1. Is the projected wind area in the elevation of the dormer addition "A" less than 20% of the projected wind area "B" in the same direction? Note that the projected wind area "B" is the shaded area shown in figure B-1 below. Where dormers are being added each side of the ridge, the projected area, "A" is the sum of the projected area of the dormer each side of the ridge.



SINGLE STORY STRUCTURE

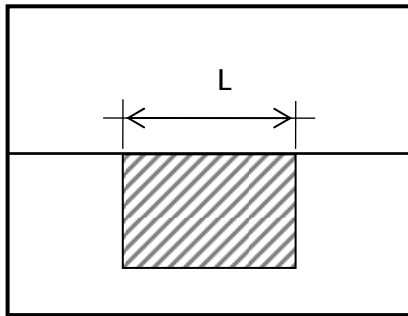
Is area "A" less than 20% of area "B"?

Figure B-1



MULTI-STORY STRUCTURE

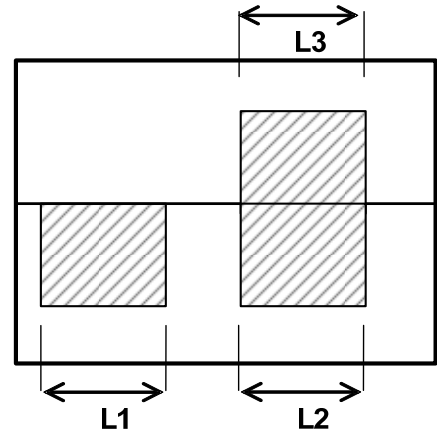
- B-2. Is the total length of all dormers that are either new or have been added on to the original structure, less than or equal to twelve feet?



ROOF PLAN

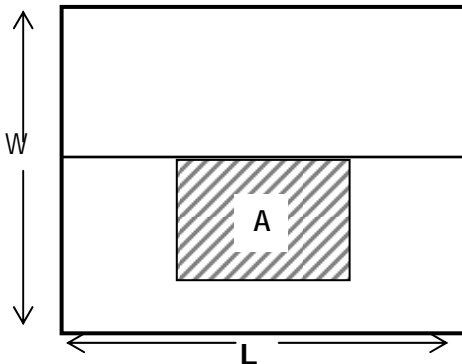
Is "L" OR "L1"+"L2"+"L3" + ...less than 12 ft.?

Figure B-2



ROOF PLAN

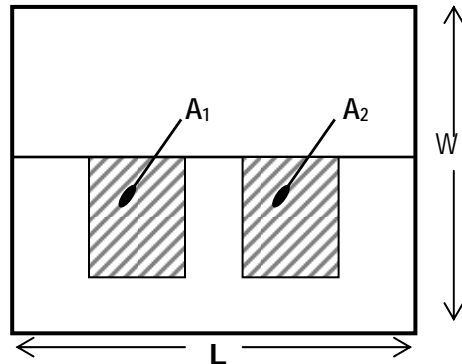
- B-3. Is the plan area of the dormer less than 40% of the total roof area?



ROOF PLAN

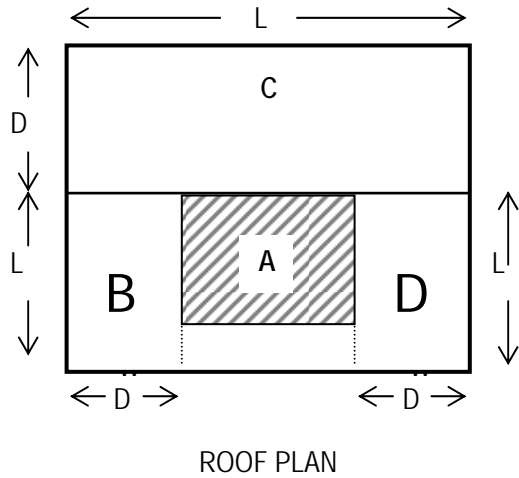
IS AREA "A" OR "A1" + "A2" LESS THAN 40% OF THE TOTAL ROOF AREA W x L ?

Figure B-3



ROOF PLAN

- B-4.** Does at least 90% of the remaining pieces of the total roof diaphragm have aspect ratios of approximately 4 : 1 maximum?



IS THE LENGTH-WIDTH RATIO OF 90% OF THE REMAINING PIECES OF ROOF AREA 4:1 OR LESS  
 I.E. IS L/D LESS THAN 4:1 FOR 90% OF THOSE PARTS?

Figure B-4

**SINGLE STORY ADDITIONS:**

- C-1.** Is the maximum depth of the addition 12' 0" and the maximum width of the addition 16' 0"? OR Is the addition 6' 0" or less in depth?

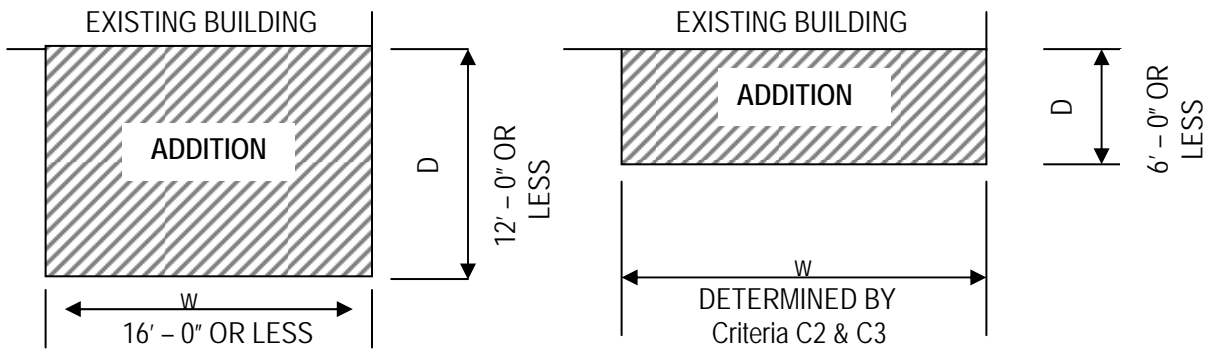
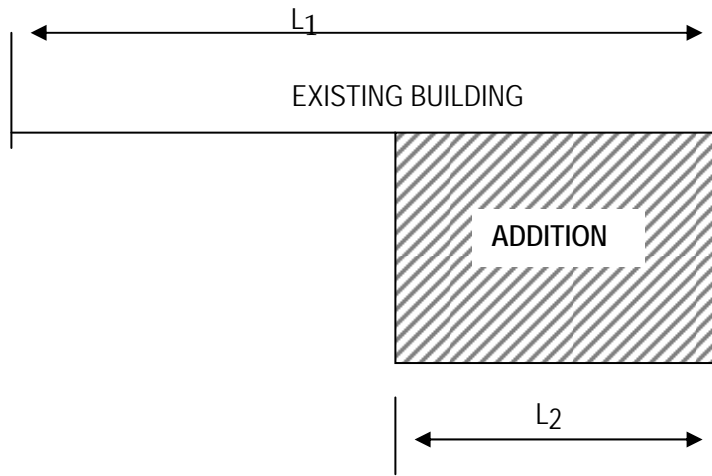


Figure C-1

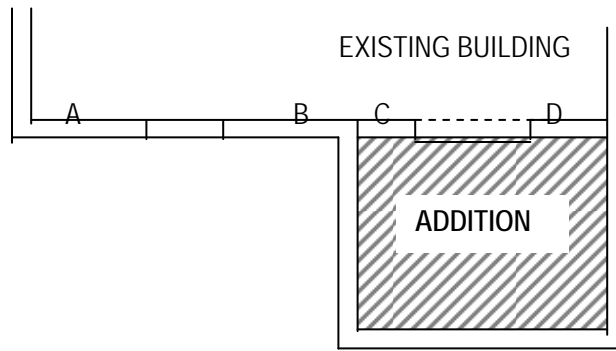
- C-2. Is the length of the addition less than or equal to one half the total side elevation of the structure to which it is being attached?



$L_2$  EQUAL TO OR LESS THAN 50% OF  $L_1$

Figure C-2

- C-3. If a section of existing exterior wall is being removed to access the new addition, does the remaining wall line to which the addition is being attached have at least 75% of the original length of solid full height wall?



IS  $A + B$  GREATER THAN OR EQUAL TO 75% OF  $A + B + C + D$ ?

Figure C-3

C-4. Is the addition built on a continuous concrete foundation wall and footing and is the addition's roof diaphragm attached to the existing house roof or exterior wall?

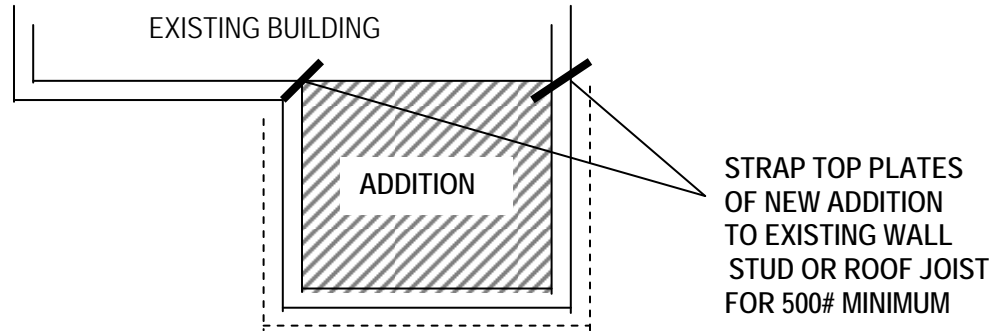


Figure C-4

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#### ALL OTHER ADDITIONS:

The new structure must comply with all current code requirements. Analysis, calculations and retrofit design prepared by an Oregon-licensed structural engineer will be required. The engineer's work *must show how the addition, as well as areas of the existing structure that will sustain new loads*, shall be upgraded for compliance with all current code requirements.

#### SUBMITTALS:

Include a complete copy of this advisory memo with drawings submitted for the addition project. Submittal must be sufficiently detailed to determine whether qualifying criteria are met. Some answers to the required questions require judgment, so submittals should include written explanations if clarification is required.