



# City of Richmond

## Report to Committee Planning and Development Department


**To:** Planning Committee  
**From:** Wayne Craig  
Director of Development

**Date:** March 5, 2015  
**File:** 08-4430-01/2015-Vol 01

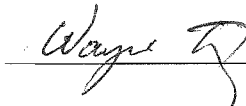


**Re: Proposed Revisions to Single-Family and Two-Unit Dwellings Building Height and Half-Storey Building Area Regulations**

### Staff Recommendations

1. That Richmond Zoning Bylaw 8500, Amendment Bylaw No. 9223 amend the regulations for "Storey, half (1/2)" and Building Height within single-family, coach house and two-unit dwelling zones be introduced and given first reading; and
2. That staff refer the proposed amendments to the Greater Vancouver Home Builders Association, the Urban Development Institute and the Richmond Small Builders Group for comment prior to the Public Hearing on April 20, 2015.

  
Wayne Craig  
Director of Development

WC:bk  
Att.

REPORT CONCURRENCE		
<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>
Building Approvals Policy Planning	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
<b>REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE</b>	<b>INITIALS:</b> 	<b>APPROVED BY CAO</b> 

## Staff Report

### Origin

On February 17, 2015, Planning Committee passed the following referral motion:

*That staff:*

- (1) review potential amendments to the zoning bylaw to address concerns related to overall building height and massing of new two and two and a half-storey homes;*
- (2) review existing half-storey regulations to strengthen requirements that the upper half storey be fully enclosed within a pitched roof line; and*
- (3) examine potential restrictions for flat roofs on two and two and a half-storey homes; and report back.*

This report responds to this referral, and brings forward an amendment bylaw to amend Richmond Zoning Bylaw No. 8500 to:

- i. Revise the definition of “Storey, half (½)”;
- ii. Amend the height regulations in all single-family, compact single-family, two-unit dwelling and single-family with coach house zones to establish a lower height for flat-roof designs.

### Background

The Planning Committee referral motion was made in response to comments raised by members of the Committee in regards to recent single-family house construction in the community. These comments echo similar concerns raised by residents through email submissions to Mayor and Council, and comments made at recent Public Hearings.

The issues relating to the compatibility of new infill single-family development (largely relating to house size, height and massing) is not unique to Richmond, as many municipalities throughout Metropolitan Vancouver are facing similar challenges. Residents’ concerns typically include the height, massing and dominant appearance of houses in the context of older established single-family neighbourhoods.

This report only deals with lots regulated under Richmond Zoning Bylaw No. 8500.

### Analysis

#### Existing Zoning Regulations

Current single-family and two-unit dwelling zoning districts regulate building height through a combination of zoning provisions, and permit the construction of a 2½-storey building provided that:

- the maximum building height does not exceed 9 m (29.5 ft.);
- the interior habitable floor area is contained within a residential vertical building envelope which is dependent on a lot’s width and depth;

- the floor area constructed above the second storey does not exceed 50% of the floor area situated immediately below;
- wall height above the second floor ceiling is limited to reduce the wall area on two (2) of the half-storey areas.

The regulations and definitions were last amended in 2008 by Bylaw 8319, to fine tune the definition of half-storey including the limits to wall height above the second floor.

### 1. Existing Half-Storey Definition

The existing definition of ‘Storey, half (½)’ in Richmond Zoning Bylaw 8500 is:

*Storey, half (½) means the uppermost storey of a building meeting the following criteria:*

- a) the habitable space is situated wholly under the framing of the roof;*
- b) the habitable space does not exceed 50% of the storey situated immediately below;*
- c) the top of the exterior wall plates is not greater than 0.6 m above the floor of such storey on any two (2) adjacent exterior walls; and*
- d) a maximum of two (2) opposite exterior walls may have a dimension greater than 0.6 m between the top of the exterior wall plate and the floor of such storey.*

The ‘Storey, half (½)’ definition is referenced in a number of zoning districts, for both single-family and multiple residential uses. The definition has been crafted to allow a limited amount of usable floor area to be provided above the second floor of a residential building, provided that this floor area is concealed within a pitched roof form (Attachment 1). The increasing use of flat roof designs was not envisioned when the definition was amended.

The “Residential Vertical Envelope (Lot Width)” and “Residential Vertical Envelope (Lot Depth)” provisions further restrict where this floor area may be located on the lot in relation to the minimum setbacks requirements (see Attachment 2 for an excerpt from the Zoning Bylaw to illustrate these regulations).

### 2. Current Application of Definition of Half-Storey – Apparent Three-Storey Massing

Trends in single-family house construction throughout Richmond have resulted in home builders utilizing the existing zoning regulations to the fullest, which reflects current market land and construction prices. This includes utilizing the full potential for floor area on a lot, including a half-storey where desirable. This has resulted in roof design, house design and massing with an apparent three-storey character. Specifically, these designs include portions of the half-storey, which are contained within the roof line, but a flat roof has been used. These houses are typically built on larger lots, and the resulting homes are often in excess of 300 m<sup>2</sup> in area (3,230 ft<sup>2</sup>). Examples of recent single-family houses which meet the current zoning regulations are provided in Attachment 3.

### 3. Proposed Revised Half-Storey Definition

Staff propose revisions to the definition of ‘Storey, half (½)’ in order to better regulate the form and character of 2 ½-storey single-family and two-unit dwellings. It is also proposed to add an

additional level of detail to the definition by creating two (2) definitions: one (1) applicable to single-family and two-unit dwellings; and a second definition applicable to town housing.

Details on the proposed definitions are:

“Storey, half ( $\frac{1}{2}$ ) means the uppermost storey of a building meeting the following criteria:

For a single detached housing dwelling unit, or a two-unit housing dwelling:

- a) the habitable space is situated wholly under the framing of the roof;
- b) the habitable space does not exceed 50% of the storey situated immediately below;
- c) the top of the exterior wall plates is not greater than 0.6 m above the floor of such storey on any two (2) adjacent exterior walls;
- d) a maximum of two (2) opposite exterior walls may have a dimension greater than 0.6 m between the top of the exterior wall plate and the floor of such storey;
- e) roof framing proposed to contain a Storey, half ( $\frac{1}{2}$ ) must be a minimum of 5:12 pitch and a maximum pitch of 12:12 (i.e. no habitable space is permitted under the roof framing for a flat roof, a gambrel roof, or a mansard roof);
- f) the exterior wall plate of a Storey, half ( $\frac{1}{2}$ ) shall be set back a minimum of 1.2 m from an exterior side yard or interior side yard exterior wall plate of the storey below and a minimum of 1.5 m from a front yard or rear yard exterior wall plate of the storey below;
- g) the roof ridge of a gable end dormer or a shed dormer be no higher than 0.5 m below the roof ridge of the main roof;
- h) the slope of a shed dormer roof must be a minimum of 2.5:12; and
- i) No balcony or deck is permitted on a Storey, half ( $\frac{1}{2}$ ).”

“For a housing, town:

- a) the habitable space is situated wholly under the framing of the roof;
- b) the habitable space does not exceed 50% of the storey situated immediately below;
- c) the top of the exterior wall plates is not greater than 0.6 m above the floor of such storey on any two (2) adjacent exterior walls; and
- d) a maximum of two (2) opposite exterior walls may have a dimension greater than 0.6 m between the top of the exterior wall plate and the floor of such storey.”

Proposed revisions are the addition of clauses e) through h), (applicable to single-family and two-unit dwellings) which are discussed in detail below.

Roof pitch: Roof framing for a proposed half storey must be a minimum 5:12 pitch and a maximum pitch of 12:12. Staff have reviewed various roof designs, and the 5:12 pitch minimum is a generally acceptable roof design, and is easily and affordably constructed.

Prohibition of Flat Roof for a Half-Storey: Staff have identified the use of flat roofs for half-storey as a contributing factor in unacceptable building massing. The proposed revisions will prohibit the construction of a flat roof, if the roof area is to contain habitable floor area. Flat roof designs will still be permitted, but the roof area cannot contain a habitable half-storey. This regulation is further reinforced by the proposed prohibition of two (2) roof lines commonly used in the construction of 2  $\frac{1}{2}$ -storey single-family homes: a gambrel (or barn) roof and a mansard roof. Graphic examples of these roof designs are provided in Attachment 4.

Additional Setbacks for Half-Storey Areas: Recent construction has seen half-storey areas constructed with exterior walls at the same setback as the exterior wall immediately below, creating large, flat wall planes, which result in a dominant appearance and contribute to the overall massing of new construction. Applying the proposed additional setback to half storey areas will result in a stepped facade above the second-storey, creating variation in the wall planes, and reducing the apparent massing of the building.

Dormer Regulations: Staff have identified massing issues arising from dormers (gable end and shed dormers) on half-storey on recently constructed 2 ½-storey houses. The proposed regulations in clauses g) and h) above are intended to establish a more appropriate building envelope for these design details, which should work in concert with the other proposed amendments to reduce the apparent massing of a half-storey.

Prohibition of Balconies and Decks for a Half-Storey: A number of recently constructed houses feature decks or balconies off the half-storey area. The physical height of these areas present challenges for privacy of adjacent lots. The proposed revisions will prohibit the construction of a balcony or deck on any area meeting the definition of 'Storey, half (½)'. Balconies and decks will still be permitted, but only on the first and second storey of a dwelling.

Storey, half (½) Definition for Townhouses:

The definition of 'Storey, half (½)' for townhouse zones is unchanged, but is defined separately from the regulations for single-family and two-unit dwellings.

**Proposed Revision to Building Height in Single-Family and Two-Unit Housing Dwelling for Flat Roof Designs**

Staff propose the following revision to address concerns with the massing of flat roof designs on family dwellings and two-unit housing dwellings (duplex):

The maximum height for principal buildings is 2 ½ storeys, but it shall not exceed the residential vertical lot width envelope and the residential vertical lot depth envelope. For a principal building with a flat roof, the maximum height is 7.5 m.

The proposed revision will apply to all Single-Family Residential (RS) zones, the two-unit housing (RD) zones, and the Compact Single Family (RC) zones, the Residential Coach House (RCH) zones, and the Edgemere Coach House / Granny Flat (RE1) zone. The proposed 7.5 m (25 ft) height limit will still allow construction of a two-storey home with generous ceiling heights, but will ensure that the home is not overly dominant, and massing is more compatible with surrounding single-family neighbourhoods. Attachment 5 provides sketches of how the roof massing might appear under these proposed revisions.

**Industry Consultation**

Staff will discuss the proposed bylaw amendments with the Greater Vancouver Home Builders Association, the Urban Development Institute and the Richmond Small Builders Group, at the next available regular meeting with these groups.

### **Financial Impact or Economic Impact**

None.

### **Conclusion**

The Planning Committee had asked staff to examine the issue of single-family dwelling height specifically as it relates to 2½-storey single-family dwellings. Staff have reviewed the zoning provisions related to the definition of “Storey, half (½)”, and have identified changes to the existing definition in the Richmond Zoning Bylaw 8500, and propose a new maximum height of 7.5 m (25 ft) for flat-roof two-storey houses.

It is recommended that Richmond Zoning Bylaw 8500, Amendment Bylaw No. 9223 to amend the regulations for “Storey, half (½)” within single-family, coach house and two-unit dwelling zones be introduced and given first reading.

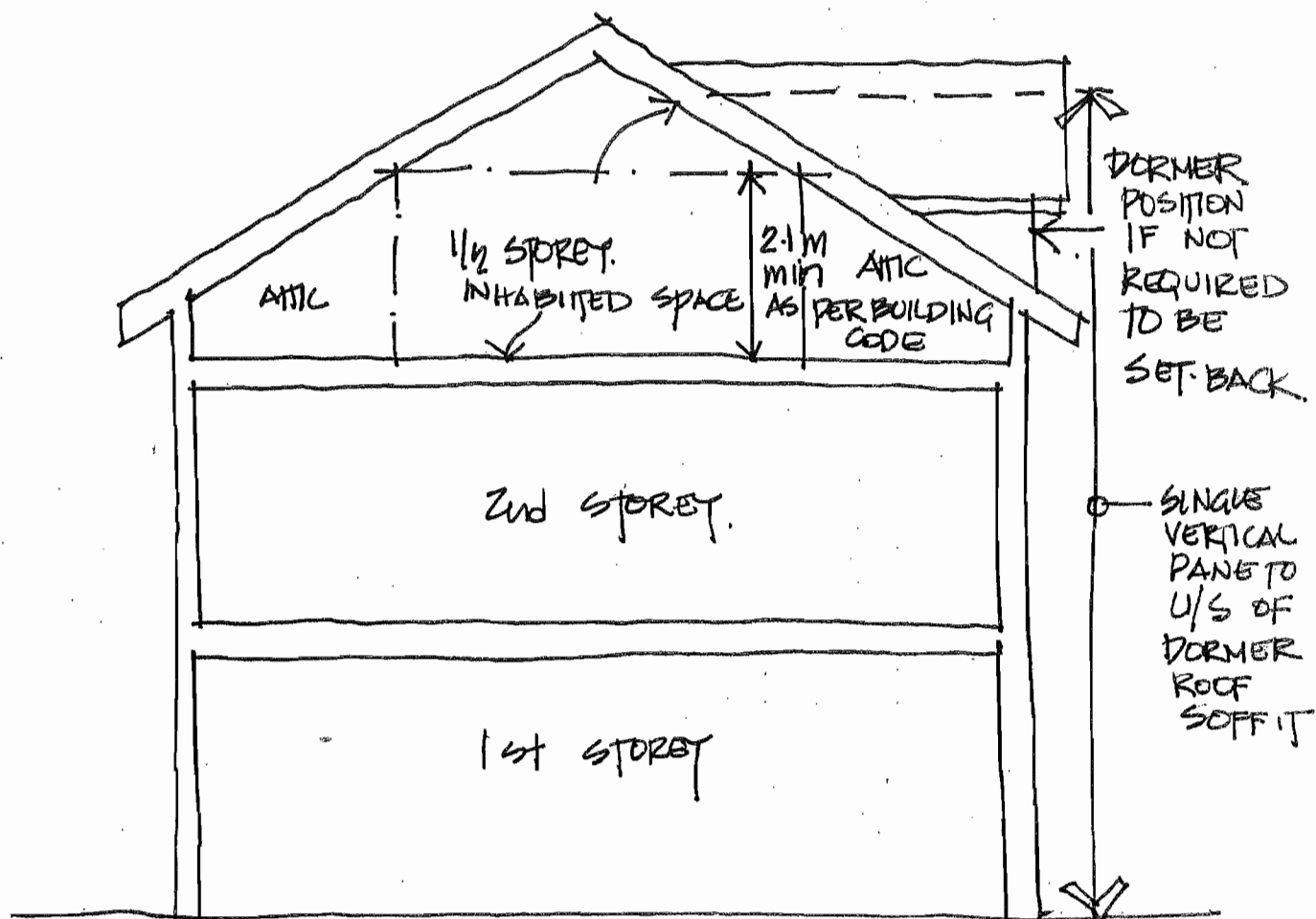
It is further recommended that staff refer the proposed amendments to the Greater Vancouver Home Builders Association, the Urban Development Institute and the Richmond Small Builders Group for comment and discussion prior to the Public Hearing on April 20, 2015.



Barry Konkin  
Program Coordinator-Development

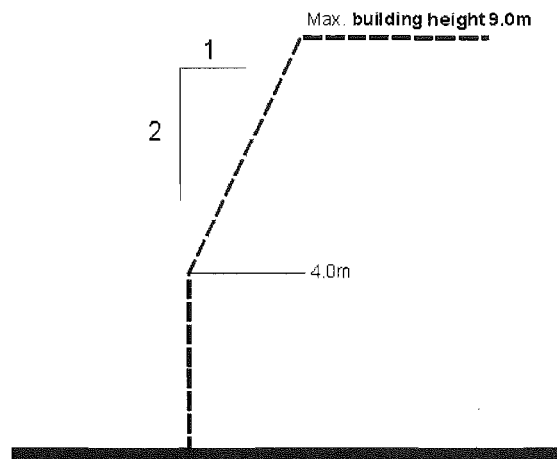
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- Attachment 1: Intended Interpretation of ‘Storey, half (½)’ definition
- Attachment 2: Vertical and Horizontal Building Envelope Regulations
- Attachment 3: Recent 2 ½ Storey House Construction
- Attachment 4: Examples of Gambrel and Mansard Roof Design
- Attachment 5: Sketches Illustrating Potential Roof Massing Under Proposed Amendments



**Residential vertical lot depth envelope**

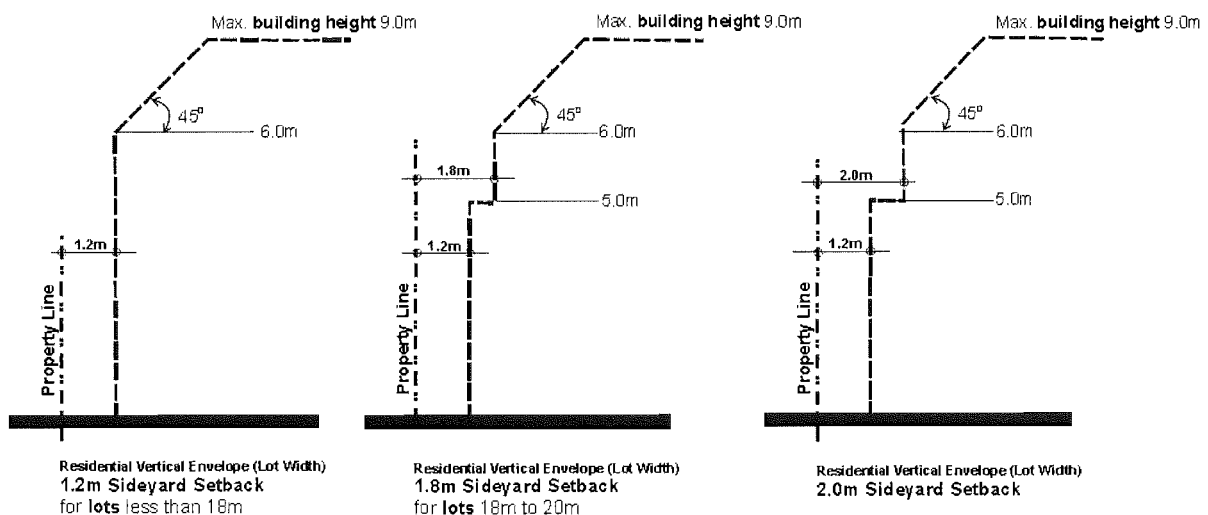
means a vertical envelope located at the minimum **front yard setback** requirement for the **lot** in question used for **single detached housing** and **two-unit housing** only, calculated from the **finished site grade**, and formed by the plane rising vertically 4.0 m to a point and then extending upward and away from the required **yard setback** at a rate of two units of vertical rise for each single unit of horizontal run to the point at which the plane intersects to the maximum **building height**.



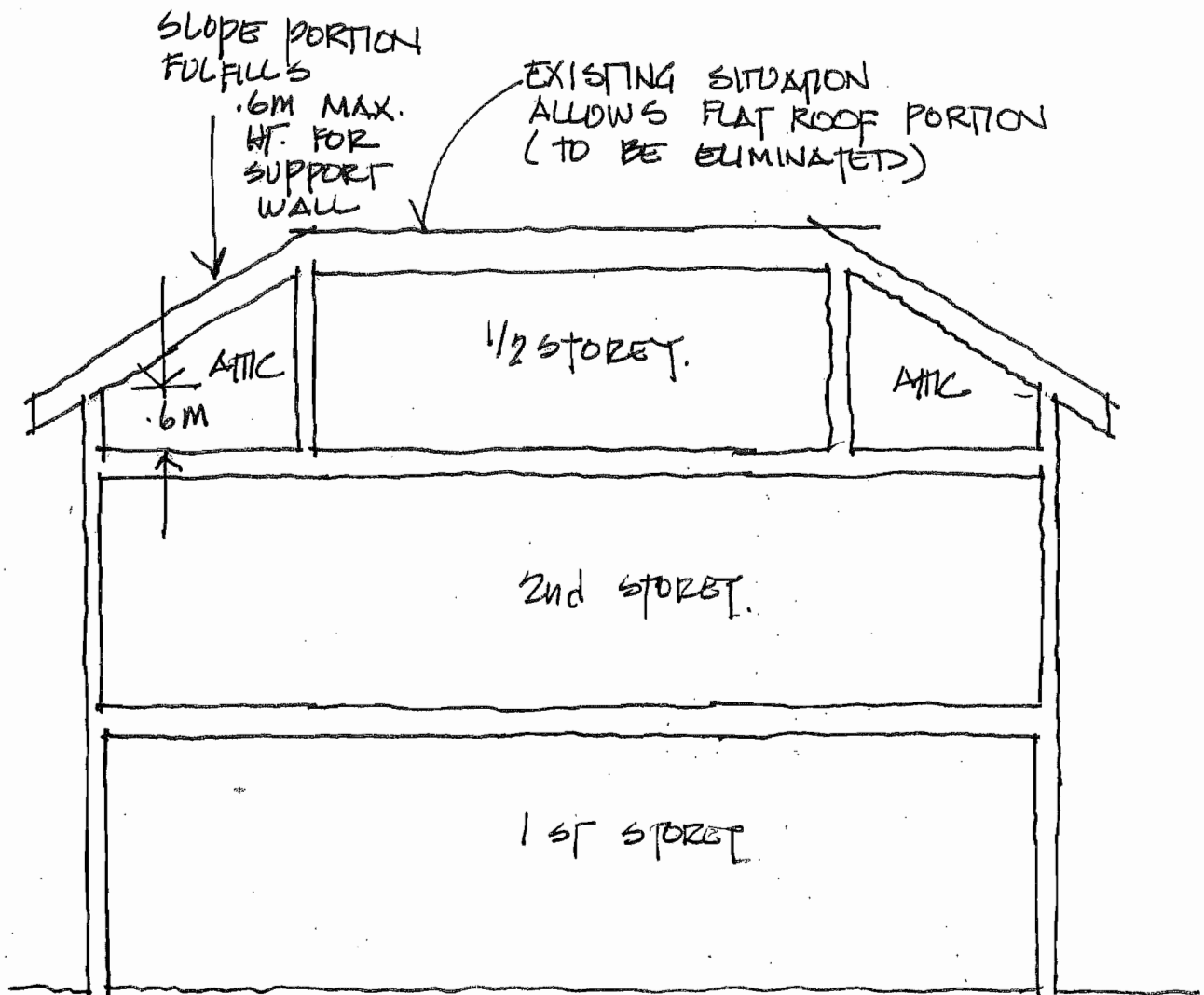
Residential Vertical Envelope (Lot Depth)

**Residential vertical lot width envelope**

means a vertical envelope located parallel to and 1.2 m from the **side lot lines** of the **lot** used for **single detached housing** and **two-unit housing** only, calculated from the **finished site grade**, and formed by planes rising vertically 6.0 m to a point and then extending inward and upward at an angle of 45° from the horizontal to the point at which the planes intersect.









Springwood Crescent





Springwood Crescent





Springwood Crescent





River Road

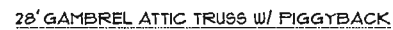


Springwood Crescent





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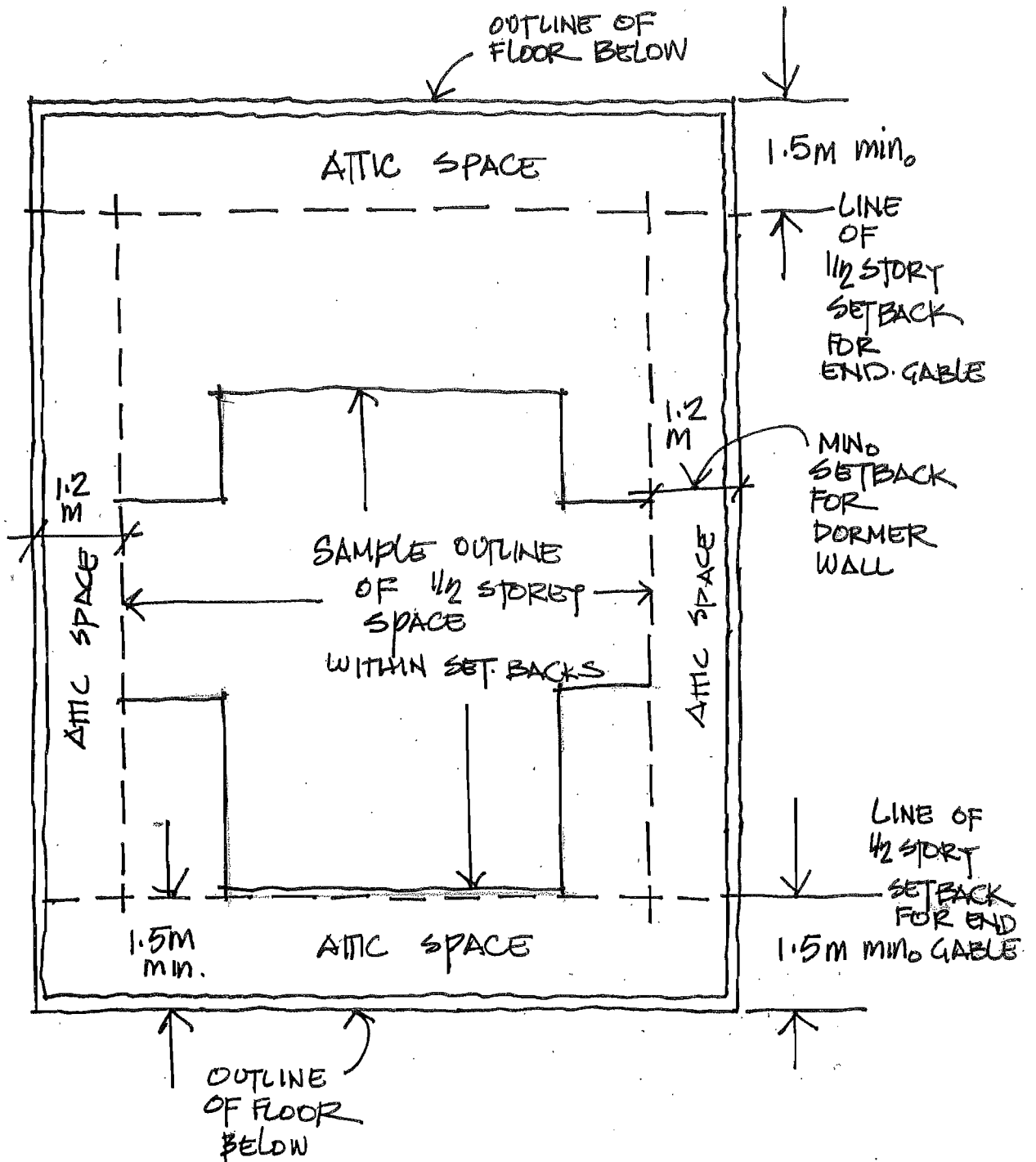




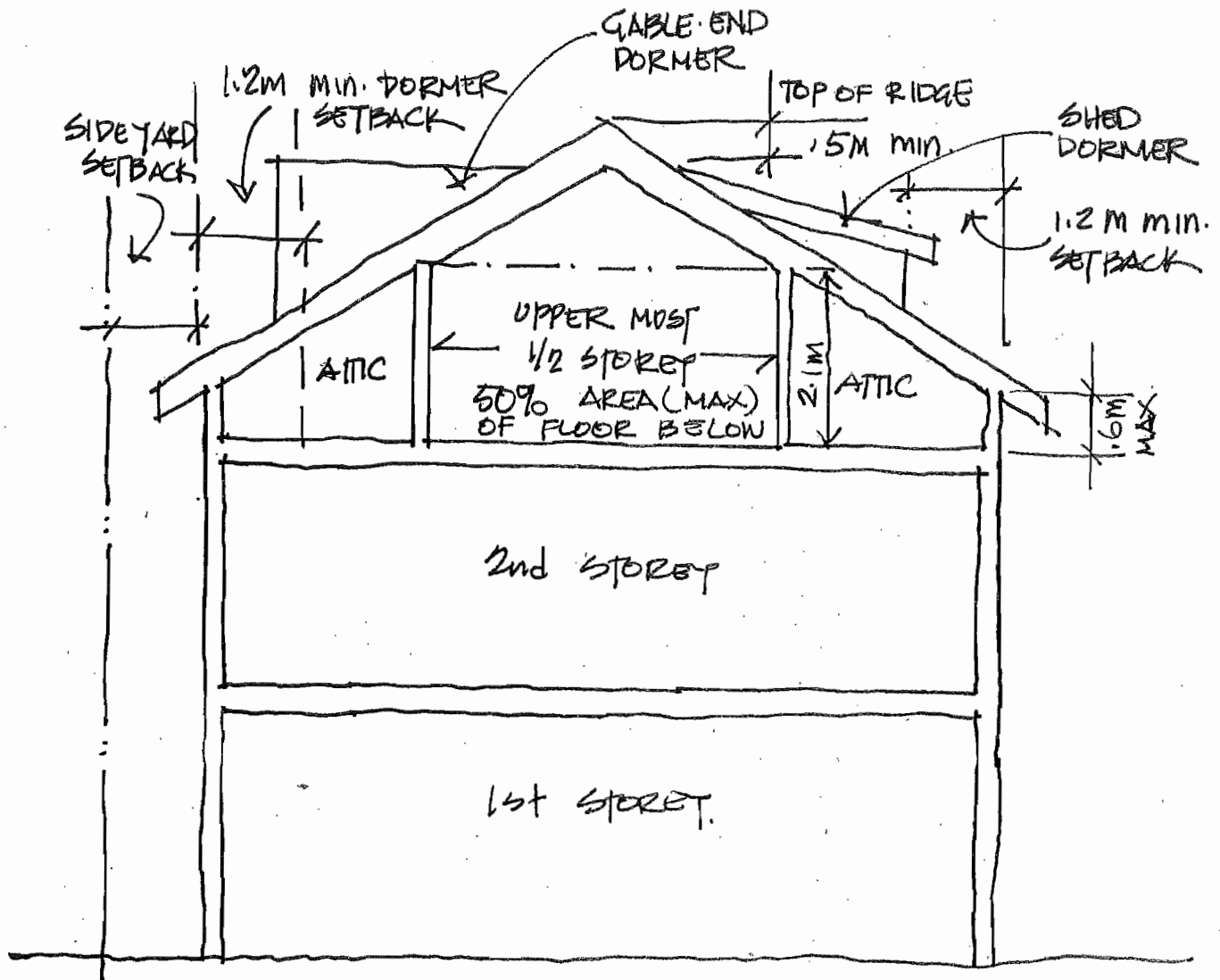
Mansard Roof



Mansard Roof









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**Richmond Zoning Bylaw 8500, Amendment Bylaw 9223**  
**Definition of Half-Storey in Single Family and Two-Unit Dwellings**

The Council of the City of Richmond, in open meeting assembled, enacts as follows:

1. Richmond Zoning Bylaw 8500 is amended in Section 3.4 Use and Term Definitions, by deleting the definition of **Storey, half (½)** and substituting the following:

“ **Storey, half (½)** means the uppermost **storey** of a **building** meeting the following criteria:

For a **single detached housing dwelling unit**, or a **two-unit housing dwelling**:

- a) the **habitable space** is situated wholly under the framing of the roof;
- b) the **habitable space** does not exceed 50% of the **storey** situated immediately below;
- c) the top of the exterior wall plates is not greater than 0.6 m above the floor of such **storey** on any two **adjacent** exterior walls;
- d) a maximum of two opposite exterior walls may have a dimension greater than 0.6 m between the top of the exterior wall plate and the floor of such **storey**;
- e) roof framing proposed to contain a **Storey, half (½)** must be a minimum pitch of 5:12 and a maximum pitch of 12:12 (i.e. no **habitable space** is permitted under the roof framing for a flat roof, a gambrel roof, or a mansard roof);
- f) the exterior wall plate of a **Storey, half (½)** shall be set back a minimum of 1.2 m from an **exterior side yard** or **interior side yard** exterior wall plate of the **storey** below and a minimum of 1.5 m from a **front yard** or **rear yard** exterior wall plate of the **storey** below;
- g) the roof ridge of a gable end dormer or a shed dormer shall be no higher than 0.5 m below the roof ridge of the main roof;
- h) the slope of a shed dormer roof must be a minimum of 2.5:12; and
- i) no **balcony** or deck is permitted on a **Storey, half (½)**.

For **housing, town**:

- a) the **habitable space** is situated wholly under the framing of the roof;
- b) the **habitable space** does not exceed 50% of the **storey** situated immediately below;
- c) the top of the exterior wall plates is not greater than 0.6 m above the floor of such **storey** on any two **adjacent** exterior walls; and

- d) a maximum of two opposite exterior walls may have a dimension greater than 0.6 m between the top of the exterior wall plate and the floor of such **storey.**”
- 2. Richmond Zoning Bylaw 8500 is amended in Section 8.1.7.1 by deleting this section in its entirety and replacing it with the following:

“The maximum height for **principal buildings** is 2 ½ **storeys**, but it shall not exceed the **residential vertical lot width envelope** and the **residential vertical lot depth envelope**. For a **principal building** with a flat roof, the maximum **height** is 7.5 m.”
- 3. Richmond Zoning Bylaw 8500 is amended in Section 8.2.7.1 by deleting this section in its entirety and replacing it with the following:

“The maximum height for **principal buildings** is 2 ½ **storeys**, but it shall not exceed the **residential vertical lot width envelope** and the **residential vertical lot depth envelope**. For a **principal building** with a flat roof, the maximum **height** is 7.5 m.”
- 4. Richmond Zoning Bylaw 8500 is amended in Section 8.3.7.1 by deleting this section in its entirety and replacing it with the following:

“The maximum **height** for **single detached housing** is 2 ½ **storeys** or 9.0 m, whichever is less, but it shall not exceed the **residential vertical lot width envelope** and the **residential lot depth vertical envelope**. For a **principal building** with a flat roof, the maximum **height** is 7.5 m.”
- 5. Richmond Zoning Bylaw 8500 is amended in Section 8.4.7.1 by deleting this section in its entirety and replacing it with the following:

“The maximum **height** for **principal buildings** is 2 ½ **storeys**, but it shall not exceed the **residential vertical lot width envelope** and the **residential vertical lot depth envelope**. For a **principal building** with a flat roof, the maximum **height** is 7.5 m.”
- 6. Richmond Zoning Bylaw 8500 is amended in Section 8.13.7.1 by deleting this section in its entirety and replacing it with the following:

“The maximum **height** for **principal buildings** is 2 ½ **storeys**, but it shall not exceed the **residential vertical lot width envelope** and the **residential vertical lot depth envelope**. For a **principal building** with a flat roof, the maximum **height** is 7.5 m.”
- 7. Richmond Zoning Bylaw 8500 is amended in Section 8.14.7.1 by deleting this section in its entirety and replacing it with the following:

“The maximum **height** for **principal buildings** is 2 ½ **storeys**, but it shall not exceed the **residential vertical lot width envelope** and the **residential vertical lot depth envelope**. For a **principal building** with a flat roof, the maximum **height** is 7.5 m.”

8. This Bylaw may be cited as **“Richmond Zoning Bylaw 8500, Amendment Bylaw 9223”**

FIRST READING

PUBLIC HEARING

SECOND READING

THIRD READING

ADOPTED

CITY OF RICHMOND
APPROVED by <i>BC</i>
APPROVED by Director or Solicitor <i>HL</i>

\_\_\_\_\_  
MAYOR

\_\_\_\_\_  
CORPORATE OFFICER