SUPPLEMENTAL INFORMATION BULLETIN
HEIGHT

This Bulletin has been designed as an information supplement to be used in conjunction with the definitions in Saanich Zoning Bylaw 8200 (Bylaw) concerning the regulations limiting the maximum permitted ***height*** of duplexes and ***single family dwellings*** in Saanich. The ***bold & italicized*** words in this Bulletin indicate that they are defined terms contained in the referenced Bylaw and that they are being used here in that context. This Bulletin and the illustrations contained in it do not form part of the referenced Bylaw and in all cases the wording in the Bylaw take precedent over this Bulletin. Questions and requests for further information should be referred to Saanich Municipal staff.

DEFINED BYLAW TERMS

When discussing how one calculates the ***height*** of a proposed ***single family dwelling***, it is important that you have an understanding the Bylaw definitions pertaining to ***height, grade*** and ***natural grade***. Please refer to the separate Bulletin that lists common Bylaw terms and definitions from Bylaw 8200.

CALCULATING HEIGHT

The ***height*** of a proposed ***single family dwelling*** is based on the terms geodetic datum and geodetic elevation which can be difficult to explain. The Bylaw requires that all elevations "*be expressed in relation to geodetic datum"*. This means that these elevations must be documented by a B.C. Land Surveyor (B.C.L.S.) as "*geodetic elevations*". "Geodetic datum" is the elevation at sea level. A "geodetic elevation" is therefore the elevation or height of a given point on land above "geodetic datum" (sea level).

To determine the ***height*** of a proposed ***single family dwelling***, the Bylaw requires that two procedures be used. The two procedures are limited, by Bylaw, to the same ***height***. As an example, the Bylaw wording regulating ***height*** in some A or RS Zones reads as follows - in part:

*"Shall not exceed a **height** of 7.5 m (24.6ft), except for those buildings and structures having or incorporating flat roofs and roofs with a pitch less than 3:12, the maximum **height** of these roofs shall not exceed 6.5m (21.3ft) as measured from **grade**. In no case shall portions of a **building** or **structure** located within a 5.0 m (16.4 ft) distance from any point along a vertical plane described by the outermost wall having the lowest elevation exceed a **height** of 7.5 m (24.6 ft) measured from the average **natural grade** of the outermost wall. The outermost wall does not include exterior projections including balconies, canopies, sundecks or other similar features."*

The first sentence in the above noted paragraph regulates what has come to be known as "average ***height***" or "procedure 1 ***height***". The balance of this paragraph regulates what has come to be known as the "single face ***height*** "or "procedure 2 ***height***." To calculate these two ***heights*** for a ***single family dwelling*** requires that one have a good understanding of the definitions listed in the Bylaw for ***natural grade***, ***grade*** and ***height***, as well as the terms geodetic datum and geodetic elevations.

To determine the "Procedure 1 ***Height***", apply the following steps:

1 - A) CALCULATE THE GEODETIC ELEVATION OF "*GRADE*" - Once a B.C.L.S. has provided actual geodetic elevations of all the external corners of the house, the geodetic elevation of ***"grade"*** can then be determined. This is done by adding up the four geodetic elevations of ***natural grade*** at the four outermost and external corners of the proposed building and dividing that total by four. The resulting geodetic elevation is, by bylaw definition, ***"grade"***.

Using the elevations shown on this bulletin this would be done as follows:

(14.9 m + 15.8 m + 11.6 m + 13.4 m) divided by 4 = 13.94 m. Therefore ***grade*** is at a geodetic elevation of 13.94m (45' 9").

1 - B) ESTABLISH THE PROPOSED GEODETIC ELEVATION FOR THE MAIN FLOOR - Once the geodetic elevation of ***grade*** and the geodetic elevations of the external corners of the house are established, the building designer must then determine the geodetic elevation for the main floor. This geodetic elevation becomes a benchmark to which the roof height(s) and ***grade*** are measured to and from.

Using the geodetic elevations and drawings shown on this bulletin this would be done as follows:

Main floor designed to be located with a geodetic elevation of 15.7 m (51' 8").

1 - C) CALCULATE THE GEODETIC ELEVATION AT THE ROOF - Determine which one of all the roof planes that will make up the entire roof will have the "highest mid-point". Calculate the proposed geodetic elevation of that mid-point by measuring the vertical distance between that mid-point and the established geodetic elevation at the main floor.

Using the geodetic elevations and drawings shown on this bulletin this would be done as follows:

The highest mid-point of all roof planes is on the dormer. This mid-point is designed to be located 5.7 m above the main floor. The main floor has a geodetic elevation of 15.7 m. therefore the geodetic elevation of the mid-point of the dormer roof is 15.7 m + 5.7 m = 21.4 m (70' 3") geodetic elevation.

1 - D) CALCULATE THE BUILDING "HEIGHT" - Determine the vertical distance between the established geodetic elevation at the main floor and the established geodetic elevation of ***"grade"***. Add this distance to the distance calculated between the geodetic elevation of the main floor and the geodetic elevation of highest mid-point on the entire roof. The resulting distance is by bylaw definition the "Procedure 1 Height".

Using the geodetic elevations and drawings shown on this bulletin this would be done as follows:

15.7 m. geodetic elevation minus 13.94 m equals 1.8 m. 1.8 m + 5.7 m = a **Procedure 1 *Height*** of 7.5 m (24' 7")

To determine the **"Procedure 2 *Height*"**, apply the following steps:

2 - A) CALCULATE "THE AVERAGE GEODETIC ELEVATION OF *NATURAL GRADE* AT THE OUTERMOST WALL HAVING THE LOWEST ELEVATION" (same wording used in bylaw) - Determine which of the four "outermost walls" of the proposed house will have the lowest average geodetic elevation when measured at ***natural grade*** and only at that specific outermost wall. To determine the average geodetic elevation of an outermost wall, add together the geodetic elevations at the two external corners of that wall together then divide the resulting number by two.

Using the geodetic elevations and drawings shown on this bulletin this would be done as follows:

The outermost wall that has the lowest average geodetic elevation is the most southerly wall. The average ***natural grade*** elevation at this wall is - (11.6 m + 13.4 m) divided by 2 = 12.5 m geodetic elevation.

2 - B) CALCULATE THE GEODETIC ELEVATION AT THE ROOF - Establish an anticipated setback line, parallel to the outermost wall having the lowest average geodetic elevation and at a perpendicular distance of 5 m (16' 5") from that outermost and southerly wall. Determine which one of the roof planes that will be partly or wholly within this 5 m (16' 5") setback area that will have the highest mid-point. Calculate the geodetic elevation of that highest mid-point by establishing the vertical distance between it and the established geodetic elevation at the main floor.

Using the geodetic elevations and drawings shown on this bulletin this would be done as follows:

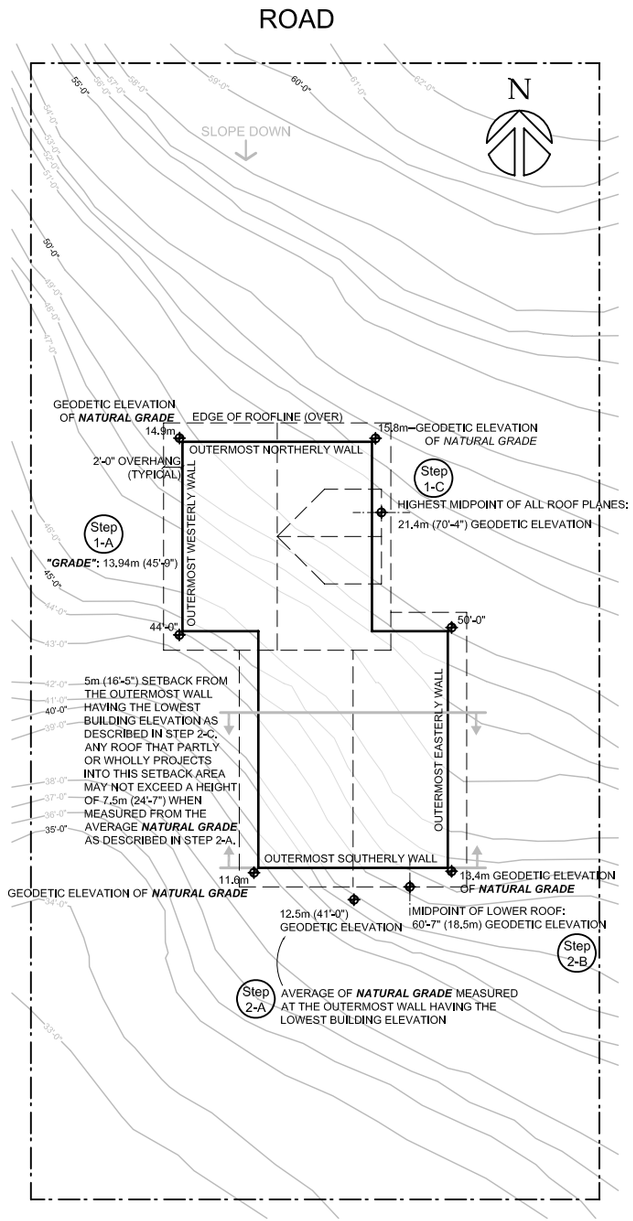
Since the entire roof construction within a 5 m setback from the outermost wall having the lowest average geodetic elevation is a simple gable end roof, the mid-point of this roof is the highest (and only) mid-point. This mid-point is set at a height of 2.8 above the main floor. The geodetic elevation of the mid-point of the roof is therefore 15.7 m + 2.8 m = a geodetic elevation of 18.5 m.

2 - C) CALCULATE THE *"HEIGHT"*- Determine the vertical distance between the geodetic elevation of average ***natural grade*** at the outermost wall and the highest mid-point of any roof partly or wholly within a 5 m (16' 5)" horizontal setback from that outermost wall. The resulting distance is the "Procedure 2 ***height***".

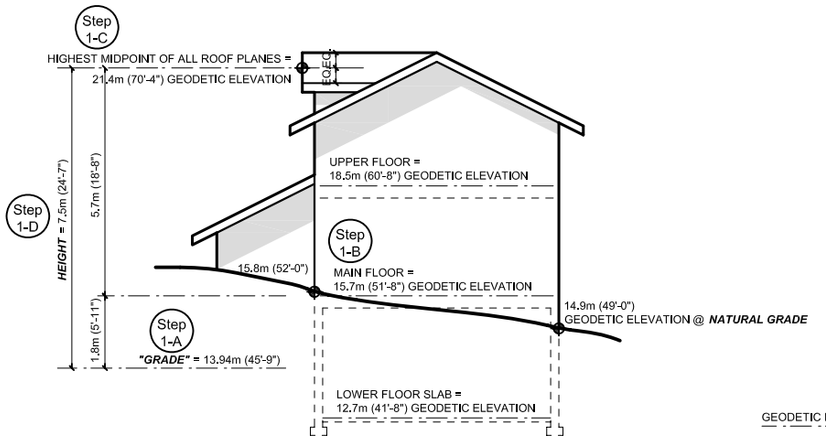
Using the geodetic elevations and drawings shown on this bulletin this would be done as follows:

Average ***natural grade*** at the outermost wall having the lowest average geodetic elevation has been established at 12.5 m geodetic elevation. The geodetic elevation of the mid-point of the roof has been established at 18.5 m. The vertical distance between these two geodetic elevations is - 18.5 m - 12.5m = a **Procedure 2 Height** of 6.0 m (19' 7")

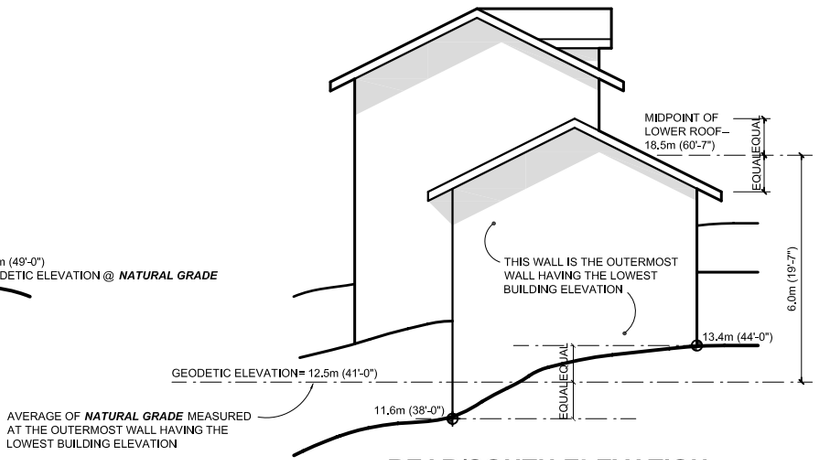
A. SITE PLAN



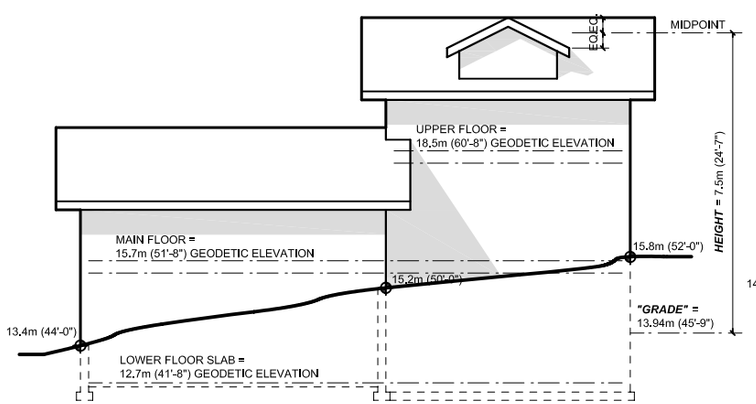
B. ELEVATIONS



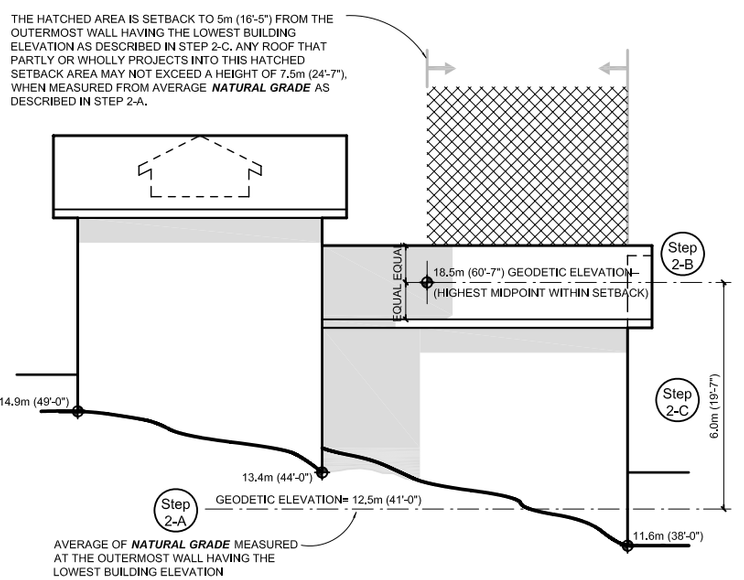
FRONT/NORTH ELEVATION



REAR/SOUTH ELEVATION



LEFT/EAST ELEVATION



RIGHT/WEST ELEVATION