

Appendix H

Geotechnical Information

DRAFT MEMORANDUM

TO: Paul Agate, P. Eng Stantec

DATE: 1 March 2006

FR: Don Lister, P. Eng.

JOB NO: 05-1414-060

**RE: MALAHAT ROUTE OPTIONS – PRELIMINARY GEOTECHNICAL
COMMENTS**

Based on the preliminary alignments you provided and using the information gathered for the Terrain Map, supplied previously, the following preliminary geotechnical comments are presented for your review and comment. When the alternatives are refined we can provide more detailed comments on a station by station basis. We have not carried out any review of the bridge/ ferry alternatives.

Options H1A, H1B, H2, H3, H4 and H5

These options leave the existing highway at the Northern Boundary of Goldstream Park and are located to the west of the highway.

The geological conditions are primarily well jointed bedrock with up to 3 m of soil cover in the form of glacial till and rubbly colluvium. Typically, however, the soil cover is 0-1 m thick. For preliminary design purposes, rock slopes of ¼ H:1V can be assumed. The routes cross the incised channels of Niagara and Arbutus Creeks. These steep walled valleys may have some slope instability potential.

Options H6, H7 and H8

This alignment leaves the highway at the Malahat Summit and to the west of the rail line. Geological conditions are broadly similar to the other options except that the soil cover tends to be thicker in the 1-3 m range and exposed rock is limited to the northern section, close to the existing highway. At the northern end the rock is more massive and less well jointed. A similar preliminary design rock slope of 1/4H:1V can be used. With the alignment being further west the terrain is less steep and in some locations there are depressions with accumulation of organic deposits typically no greater than 1 m thick.

DRL/JM/amt