



83D.045

ALBRED A / ROBINA
TERRAIN STABILITY INTERPRETIVE MAP

BCGS Mapsheet 83D.045, 83D.055, 83D.065

Scale 1:20,000

EXAMPLE OF MAP SYMBOLS



TERRAIN STABILITY CLASSIFICATION

Terrain Stability Class	Likelihood of Landslide Initiation	Examples of Terrain Attributes	Management Implications
I	Negligible	<ul style="list-style-type: none">Well-drained slopes and coarse-textured material on up to 30% slopesFine-textured material on <10% slopesFloodplains, fans, organic, wetlands	<ul style="list-style-type: none">No significant stability problems expected
II	Very Low	<ul style="list-style-type: none">Well-drained, nonclastic, colluvial, and glaciofluvial deposits on slopes up to 40%Imperfect to moderately drained lower and mid-slopes with moraine or fine-textured colluvial deposits on slopes up to 40%Upland plateau areas and bedrock-controlled ridges with organic, till, colluvium, or weathered bedrock on slopes up to 60%	<ul style="list-style-type: none">No significant stability problems expectedMinor slumping expected along road cutsRegular road inspections should occur and periodic maintenance may be required
III	Low	<ul style="list-style-type: none">Well-drained, nonclastic, colluvial, and glaciofluvial deposits on slopes between 30% and 50%Well-drained moraine and glaciofluvial deposits with slopes between 40% and 60%Well-drained moraine and/or colluvial deposits complexed with minor bedrock outcrops on slopes up to 65%Irregular, hummocky, bedrock-controlled terrain with varying drainage and slope gradients up to 75%	<ul style="list-style-type: none">Minor problems of instability should be expected. No natural slope failures are presentSome road-induced instability or erosion may occur. Minor slumping expected along road cutsRegular road inspections should occur and periodic maintenance may be required. Effective drainage should be maintainedRoad construction and/or harvesting may cause sidewall sloughing in gullied terrainDetailed terrain stability field assessment by a qualified terrain stability specialist is usually not required, but sensitive microsites may require review
Moderate to High for road		<ul style="list-style-type: none">Wet or fine-textured moraine deposits on 40% to 80% slopesModerately well-drained moraine, glaciofluvial deposits, and fine-textured colluvium on 50% to 75% slopesWell-drained, uniform moraine and glaciofluvial deposits and fine-textured colluvium on 55% to 75% slopesWell-drained, shallow moraine and/or colluvial deposits complexed with minor bedrock outcrops on slopes up to 75%	<ul style="list-style-type: none">Similar to Class III terrain if harvesting onlySimilar to Class IV terrain with conventional road constructionOpen construction techniques, regular inspection and maintenance, and permanent deactivation are often recommendedDetailed terrain stability field assessment by qualified terrain stability specialist is required for development of roads and excavated trails
Low for harvesting		<ul style="list-style-type: none">Wet or fine-textured moraine deposits on 40% to 80% slopesModerately well-drained moraine, glaciofluvial deposits, and fine-textured colluvium on 50% to 75% slopesWell-drained, uniform moraine and glaciofluvial deposits and fine-textured colluvium on 55% to 75% slopesWell-drained, shallow moraine and/or colluvial deposits complexed with minor bedrock outcrops on slopes up to 75%	<ul style="list-style-type: none">Wet season construction and harvesting will significantly increase the potential for logging-related landslidesSpatial road construction techniques, regular inspection and maintenance, and permanent deactivation are usually recommendedDetailed terrain stability field assessment by qualified terrain stability specialist is required prior to development
Moderate to High		<ul style="list-style-type: none">Wet or fine-textured moraine deposits on 40% to 80% slopesModerately well-drained moraine, glaciofluvial deposits, and fine-textured colluvium on 50% to 75% slopesWell-drained, uniform moraine and glaciofluvial deposits and fine-textured colluvium on 55% to 75% slopesWell-drained, shallow moraine and/or colluvial deposits complexed with minor bedrock outcrops on slopes up to 75%	<ul style="list-style-type: none">Wet season construction and harvesting will significantly increase the potential for logging-related landslidesSpatial road construction techniques, regular inspection and maintenance, and permanent deactivation are usually recommendedDetailed terrain stability field assessment by qualified terrain stability specialist is required prior to development
High to Very High		<ul style="list-style-type: none">Areas where active or recurrent terrain instability is presentHigh scarps of thick till or complex stratigraphy with recurrent erosion and/or significant soil creepGullied terrain incised in deep till with evidence of instabilityActively eroding or failing scarps of fans and terraces; often associated by lateral fault erosionSleep-sided gullies or very wet slopes where small-scale instability or surface disturbance is significant	<ul style="list-style-type: none">This type of terrain should normally be avoided during forestry developmentSpatial road construction techniques, regular inspection and maintenance, and permanent deactivation are usually necessaryOn-site supervision of road construction is often required. Detailed terrain stability field assessment by qualified terrain stability specialist is required prior to development

Modified from Mapping and Assessing Terrain Stability Guidebook (Ministry of Forests 1999) and Guidelines and Standards for Terrain Mapping in British Columbia (Resource Inventory Committee, January 1996)

SOIL EROSION POTENTIAL

Soil Erosion Potential	Typical Slope Range	Dominant Texture	Soil Drainage	Other Factors	Management Implications
Very Low (VL)	<10%	Blocks, rubble, silt, mud	Very poor to imperfect, rapid	Flat or very short slopes	<ul style="list-style-type: none">Low concern for sediment production
Low (L)	5% to 40%	Blocks, rubble, silt, mud, coarse sand, gravel	Poor to rapid	Short slopes, small catchment area	<ul style="list-style-type: none">Erosion limited to channels and stream banksExpect minor erosion of fines from ditch lines and disturbed soilsExercise care not to channelize water onto sensitive sites
Moderate (M)	30% to 70% on M and C, 0% to 40% on F and FG	Rubble, silt, mud, coarse sand, gravel	Imperfect to well	Moderate to long slopes with small to medium catchment area	<ul style="list-style-type: none">Expect some problems with disturbed sedimentsPlan additional measures to reduce sediment production where entry into stream network is likely
High (H)	>70% on M, >80% on C, >40% to 70% on F and FG	Silt, sand	Moderate to well	Long slopes, large catchment area, active gullying	<ul style="list-style-type: none">Water management is criticalCare should be taken to prevent soil erosionMitigative measures should be employed during road constructionDetailed site inspection by terrain or soils specialist is recommended
Very High (VH)	>70% on F and FG, >80% on M	Silt, sand	Moderate to well	Long slopes, large catchment area, active gullying, active geomorphic processes	<ul style="list-style-type: none">Site disturbance should be avoidedSevere surface and gully erosion problems existNo water should be channelized onto these sensitive sitesDisturbed sites should be rehabilitated immediatelyDetailed site inspection by terrain or soils specialist is recommended

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POTENTIAL SEDIMENT DELIVERY FROM SURFACE EROSION SOURCES

Risk of sediment delivery to streams	Proximity of stream channel to polygon		
	No stream channel in or adjacent to polygon	Minor stream** channel in or adjacent to polygon	Major stream** channel in or adjacent to polygon
Very Low (vL)	Gentle to steep slope		
Low (L)		Gentle slope	
Moderate (m)		Moderate slope	Gentle to steep slope
High (h)		Steep slope	Moderate slope
Very High (vh)			Steep slope
Slope steepness downslope from polygon to stream channel			

* Minor streams are those potential streams with channel widths that are less than or equal to 1.5m, or any ephemeral stream
** Major streams are potential streams with channel widths that are greater than 1.5m
From Mapping and Assessing Terrain Stability Guidebook (Ministry of Forests 1999)

BOUNDARY LINES AND ON-SITE SYMBOLS

—	Definite polygon boundary	—	Scarp in surficial materials
- - -	Indefinite polygon boundary	—	Recent or recurrent landslide scar
.....	Arbitrary polygon boundary	—	Headwall scar
—	Study area boundary	—	Gully
—	Ground Observation	—	Terrain Stability Class IV _a
A	Visual Observation	—	Terrain Stability Class IV
+++++	Meltwater channel; small	—	Terrain Stability Class V
+++++	Meltwater channel; large		

REFERENCES

Howes, D.E. and E. Kenk, 1997. Terrain Classification System for British Columbia (rev. ed.)
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Forest Practices Code of BC. Mapping and Assessment, Terrain Stability Guidebook. Aug. 1999
"Terrain Database Manual" Standards for Digital Terrain Data Capture in British Columbia. June 1998
Forest Practices Code of BC. Community Watershed Guidebook. October, 1998
Standard for Digital Terrain Data Capture Enrta 2005-1-BIP

DATA SOURCES

Fieldwork Date: Collected on October 21-27, 2006
Aerial photos: 2000, Colour
1:20,000 TRIM Base Maps (NAD 83)

CREDITS

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