										TERRAIN	it is irregular unité le a known		
SYMBOL	NAME (AGE)	NATURE OF MATERIAL AND THICKNESS	DISTRIBUTION AND STRATIGRAPHY	VENTORY LEGEND  GEOMORPHOLOGY AND DRAINAGE	PERMAFROST	OTHER ENGINEERING CHARACTERISTICS	SYMBOL	NAME (AGE)	NATURE OF MATERIAL AND THICKNESS	DISTRIBUTION AND STRATIGRAPHY	GEOMORPHOLOGY AND DRAINAGE	PERMAFROST	OTHER ENGINEERING CHARACTERISTICS
I1, I2, Is	Ice, valley glacier cirque glacier, cliff glacier (Neoglacial or modern)	Glacier ice with veneer or thin blanket of snow and firm. Valley glaciers 50 to 150 m thick, cliff glaciers 2 to 40 m thick.	Common in Kluane Ranges northwest of Kathleen Lakes, Alsek Ranges, and Coast Mountains. Generally overlies glacially scoured bedrock. Terminates in ice-cored moraines.	Flat to steeply sloping as indicated by slope modifiers. Characterized by crevasses, moulins, incised meltwater channels, ice bridges, and thaw lakes. Avalanches common on cliff glaciers. Some valley glaciers periodically surge. Well drained due to surface and subsurface stream network	Glaciers may be at the pressure-melting point at their base; small glaciers are probably at freezing temperature throughout their thickness. Ablation characterizes lower parts of all glaciers during summer.	Unstable surfaces due to ablation, crevasses, continued downvalley glacier movement, and glacier surges on many valley glaciers. Avalanches pose hazard on cliff glaciers.	Mr, aMr, bMr M <sup>N</sup> , aM <sup>N</sup> , bM <sup>N</sup>	Morainic ridge (N - Neoglacial; otherwise Late Wisconsinan)	Diamicton; high sand, silt, and stone contents; locally contains crudely sorted material, low in fines (aM); in places contains high proportion of boulders and cobbles (bM).  Generally 10 to 50 m thick, rarely to 100 m.	Individual ridges and groups of ridges common along limit of Late Wisconsinan and Neoglacial glaciations. Small morainic ridges (similar to DeGeer moraines or washboard moraine) present adjacent to Alaska Highway southeast of Kloo Lake. Till and colluvial blanket common upslope from ridges, disintegration moraine and till blanket downslope. Underlain by drift, colluvium, and rarely by bedrock.	Ridge(s) having moderate to steep slopes; well drained.		At high elevations, snow patches accelerate mass wastage as indicated by presence of nivation terraces. Locally, a source of construction material, including aggregate, especially when processed.
Ap-a, fAp-a gAp-a, sAp-a	Active floodplain (Modern)	Generally gravel (Ap, gA), rarely sand (sA) or silt (fA); gravel is coarse on floodplains of high-gradient alpine streams; rare lenses of silt and clay; probably averages 3 to 10 m thick under large streams.	Active floodplains are broad along most major streams flowing out of St. Elias Mountains; small streams originating in mountains have narrow active floodplains bordered by vegetated floodplains, low terraces, or stream-cut scarps. Small floodplains are underlain by colluvium or drift; large ones probably extend to bedrock.	developed by meltwater.  Channel and bars form braided patterns that are constantly shifting; small scarps to 1.5 m high with ripple marks, ellipsoidal scours, and silt volcances; no vegetation; inundated by water during spring flood, times of high precipitation, and	Aufeis may form along floodplains and persist until late spring. Permafrost absent except under small floodplains at high elevations.	Flooding is a constant hazard. In places sediments are "quick" near surface. Sand and silt floodplains vulnerable to minor channelling if disturbed, and liquefaction if subjected to intense ground motions associated with earthquakes. Aggregate source.	Mm, tMm, aMm, gMm, bMm, rMm, aMm, bMm, tMm-G	Till plain, disintegration moraine (N - Neoglacial; otherwise Late Wisconsinan)	Diamicton; high sand, silt, and stone contents; till known or assumed to have low stone content (tM); may be crudely sorted and low in fines (aM, gM, rM) or contain a high proportion of boulders and cobbles (bM).  Probably ranges from 3 to 40 m thick.	Common throughout valleys; usually associated with other glacial deposits. Unit commonly contains unmapped patches of outwash and less commonly, lacustrine deposits. Fine grained pond sediments and peat in many depressions. Discontinuous thin veneer of silt and peat on Wisconsinan moraines. Generally underlain by drift or alluvium.	imperfect to moderately good.	Permafrost generally absent or sporadic except in alpine valleys. Ground ice contents low to medium where permafrost present.	Areas with moderate ground ice contents vulnerable to thermokarst subsidence. Snow patches accelerate mass wastage as indicate by presence of nivation terraces. Hills and ridges generally stable surfaces. Locally a source of construction material, including aggregate, especially when processed.
Ap, fAp, aAp, gAp	Floodplain	Generally gravel with veneer of sand and silt; veneer commonly has significant organic content and cap of peat; in places lacks fine textured veneer (aA, gA); in places primarily silt and sand (fA); probably averages 3 to 10 m thick adjacent to large streams.	Borders most streams.  Bordered by active floodplains, low terraces, or stream-cut scarps. May include some unmapped areas of active floodplain and low terraces in small valleys. Floodplains underlain by colluvium, drift, or bedrock.	intense glacier melt.  Few channels are present on surface; shallow thermokarst depressions occur where indicated; coarse textured facies (A, aA, gA) generally moderately well drained except in channels and on the inner parts of broad floodplains where pools of water may be present; fine textured facies	Permafrost absent except under small floodplains at high elevations and under floodplains consisting of silt (fA), especially those marked by thermokarst.	Annual flooding probable. Veneer vulnerable to minor channelling if disturbed. Coarse textured facies generally has stable surface and is aggregate source. Fine textured facies (fA) vulnerable to thermokarst subsidence (where underlain by icy frozen sediments) and channelling if disturbed.	Mp, tMp, bMp, Mn, tMn, aMn, bMn, bMn, bMp <sup>2</sup> , Mn, tMn, tMp-G, tMn-G, aMn-G, bMn-G	Till plain (N - Neoglacial; 2 - Early(?) Wisconsinan; otherwise Late Wisconsinan)	Diamicton; high sand, silt, and stone contents; texture of basal part reflects underlying material; till known or assumed to have low stone content (tM); in places has high sand and stone contents (aM); at high elevations till has high proportion of boulders and cobbles (bM). Averages 3 to 10 m thick, varies between 1 and 50 m.	Common in Shakwak Trench and along axis of small valleys. Usually associated with other glacial deposits, and underlain by drift or alluvium. Discontinuous thin veneer of silt overlying till commonly present; unit may contain small unmapped areas of outwash and lacustrine deposits.		Permafrost generally absent or sporadic except at high elevations and under some slopes having a north aspect. Ground ice content generally low to medium where permafrost present.	Slopes underlain by permafrost with moderate ice contents may be vulnerable to shallow slope failures, i.e. active layer detachment flows. Generally good source of fill and road building material; potential source of aggregate, but requires processing (e.g. crushing, screening).
aAf, gAf, bAf, Af, fAf, xAf, Af-A, aAf-A, gAf-A,	Alluvial fan (A - Modern; N - Neoglacial; otherwise Postglacial,		Common along edges of glaciated valleys. Largest fans present along truck valleys. Toes of fans generally impinge on floodplains and stream terraces; includes small unmapped	(fA) generally imperfectly to poorly drained; inundated by water during high floods; shallow water table.  Gently to moderately sloping. Generally moderately well to well drained; gently sloping fans with thick veneers or blankets of fine textured sediment may be imperfectly	Most alluvial fans having no or negligible veneers of fine textured sediment are free of permafrost.  Permafrost common in fans along southern edge of valleys and those having a significant cover or content	Surface vulnerable to moderate thermokarst subsidence and erosion if disturbed where icy sediments cap fans. Rapid shifts in stream position (avulsions) occur across surface of some alluvial fans, especially young fans. N	Mb, tMb, sMb, aMb, bMb, N N Mb, aMb N bMb, Mb-G, Mb-V, tMb-V, aMb-V	Till blanket (N - Neoglacial; otherwise Late Wisconsinan)	Diamicton; high sand, silt, and stone contents; till known or assumed to have low stone content (tM); in places till has high sand and stone contents (sM, aM); at high elevations till has high proportion of boulders and cobbles (bM).	Common on slopes throughout area. Other morainal deposits common downslope from till blanket and colluvium upslope. Usually underlain by bedrock, rarely by colluvium. Unit contains unmapped patches of outwash, colluvium, alluvium, and bedrock.	Nivation terraces and hollows and ephemeral snow patches present at	Permafrost present at high elevations, although locally absent under south-facing slopes. Moderate to high ground ice content in upper part of unit on gentle slopes where permafrost present.	Areas with moderate to high ground ice contents vulnerable to thermokarst subsiden and erosion. Snow patches accelerate mass wastage as indicated by presence of nivatio terraces.
At, Ad, fAt,	Wisconsinan)  Wisconsinan	(bA) without veneer of sand and silt; in places fine textured sediments (fA) or gravel and sand interbedded with fine textured sediments (xA). Fans with steep slopes in alpine areas consist of coarse bouldery gravels. Probably averages 3 to 35 m thick.  Generally gravel with veneer of	Borders all streams.	drained. Channels, bars, and small scarps to 1.5 m high on active fans (A-A).  Stands from 1.5 to 30 m above	of fine textured sediment. Moderate to high ice contents present in peat and fine textured materials, but low in coarse textured materials. Water under artesian pressure in taliks and below permafrost.  Permafrost irregularly distributed,	young fans (A <sup>N</sup> ). Flooding constant hazard in low areas adjacent stream channels, especially young and modern fans (A <sup>N</sup> , A-A).  Debris flows common on small alpine fans and at the apex of large fans. Aggregate source.  Stable surface except where terrace capped	Mv, stMv, gtMv, aMv, bMv, aMv, aMv-v	Till veneer (N - Neoglacial otherwise Late Wisconsinan)	Diamicton; high sand, silt, and stone contents; locally contains crudely sorted material, low in fines or high in rubble or boulder content (stM, gtM, aM); commonly till has high	Common on glaciated slopes. Morainal deposits common downslope from till veneer and colluvium upslope; bedrock interspersed. Usually underlain by bedrock. Unit locally contains unmapped patches of outwash,	indicated on map), especially in Dezadeash Ranges and Coast Mountains adjacent to Kusawa Lake.  Gentle to steep slopes as indicated by slope modifiers. Generally well drained; may be rilled and gullied on steep slopes. Creep and	Permafrost present under north-facing slopes and at high elevations, but usually absent under south-facing slopes.	Vulnerable to gullying and thermokarst erosion on steep slopes. Mass movement may be a hazard to development.
A complete and the second of t	(N - Neoglacial; otherwise Postglacial)	sand and silt; veneer commonly has significant organic content and cap of peat; veneer thickest on high terraces. In places gravel (gA) lacks fine textured peat veneer. In places fine textured sediments (fA) or inter- bedded coarse and fine textured sediments (xA). Gravel coarse on narrow terraces adjacent to alpine streams. Generally between	terraces, or stream-cut scarps; includes unmapped floodplains in small valleys; underlain by colluvium, drift, or bedrock.	streams. Surface generally flat except for minor terrace scarps and rare channel traces. Terraces without fine textured veneer generally well to moderately well drained. Veneered terraces moderately well drained; channels and low swales poorly drained.	but common in terraces in northern part of 115A, especially those with significant content of fine textured sediment. Ground ice absent except in peat blankets and silty sandy sediment. Water under artesian pressure in taliks and below permafrost.	by thick peat or ice-rich silt and sand lead to moderate thermokarst subsidence and erosion. Outer edge of terrace generally most favourable location for development. Aggregate source.		Rock glacier (Neoglacial)	Primarily bouldery rubble, rarely substantial content of sand or fines. Generally 10 to 30 m thick.	Common throughout Kluane and Alsek ranges; few in Icefield Ranges and Coast Mountains; isolated occurrences in Yukon Plateau. Commonly bordered by talus aprons and rock cliffs. Core may contain glacier ice, otherwise underlain by bedrock; lower part may	solifluction common forms of mass movement in active layer on steep slopes.  Varies from tongue-shaped to lobate-shaped to spatulate-shaped. Surface either gently to moderately sloping or with many ridges and furrows. Distal edge generally marked by steep		Mass movement may be a problem to developme Potential source of construction material, including aggregate; crushing probably required.
Ab, fAb	Alluvial blanket (Postglacial)	3 and 15 m thick but ranges between 1.5 and 50 m.  Interbedded gravel, sand, silt, commonly capped by peat; in places mainly fine textured sediment (fA).	Common along edges of valleys. Blanket commonly overlies drift or coarse alluvial deposits.	Gently to moderately sloping. Generally imperfectly to moderately well drained.	Permafrost common, but irregularly distributed. Ground ice contents generally moderate to low.	Surface vulnerable to moderate erosion if disturbed. Surface water may need controlling in case of development.	M, aM, bM	Ice-cored	Primarily rubble, generally bouldery, over glacier ice. Ice-cored moraines	overlie drift, alluvium, or colluvium.  Common in Icefield and Alsek ranges. Located on lower reaches or termini	slope. Young rock glaciers subject to continuous downslope	Portion of underlying ice may be at pressure-melting point, remainder at	Development hazardous because of continued ablation and slope instability; also risk
d recharge incustry of the authority of the authority the varieting probab frost and the develop carlong. In Dezades of slit are present th	Sand dunes (Postglacial)	Sand; 2 to 30 m thick.	Generally overlies outwash and lacustrine deposits and less commonly, morainal, colluvial, alluvial deposits, and bedrock.	Surface water may cross blanket in form of numerous small rills.  Mainly parabolic and linear ridges standing 5 to 30 m above surrounding terrain. Ridges well drained, depressions moderately well drained. Active blowouts occur on dunes.	Permafrost generally absent; low ground ice contents.	Icings possible.  Vulnerable to erosion on slopes and deflation if disturbed.		moraine and debris-covered glacier (Neoglacial)	commonly coarse textured diamicton (aM) or with high proportion of boulders and cobbles (bM). Debris thickness over ice ranges from negligible to 5 m, rarely thicker.	of glaciers in alpine valleys. Contains patches of unmapped outwash and, less commonly, glaciolacustrine deposits. Underlain by older drift, colluvium, or bedrock.	topography including unstable slopes, ice-thaw lakes, ice cliffs; topography generally hummocky or ridged.  Debris-covered glaciers and small ice-cored moraines characterized by a gently to moderately sloping surface	subfreezing temperature. Ice subject to ablation where exposed or where overlying debris is thin. Permafrost present in overlying debris except where debris is thin and active layer intersects upper surface of glacier ice.	of disturbance due to glacier surge or advance. Potential source of construction material, including aggregate; crushing probably required.
Eb a fam energy w veiler developed acceptantion as a	Eolian blanket (Postglacial)	Fine sand and silt.	Common in areas adjacent to Dezadeash Lake and valley; forms primarily on flat to moderately sloping surfaces. Generally overlies lacustrine, glaciofluvial, or morainal deposits.	Slopes reflect morphology of underlying unit; occurs on flat to moderate slopes. Drainage good to moderately good.	Irregular permafrost distribution. Low ground ice contents, but ice lenses common in silty facies.	Vulnerable to erosion on steep slopes and deflation if disturbed.	Dp, bDp,	Drift plain,	Undifferentiated till, outwash,	Common in glaciated valleys and basins; usually associated with other glacial	and incised streams. Distal edge generally marked by steep slope.  Flat (Dp), undulating or rolling	Permafrost generally absent or	Further investigation required to
	(Postglacial)	Mainly sand and silt; may contain thin layers of peat.	Common in areas adjacent to Dezadeash Lake and valley. Generally overlies lacustrine, glaciofluvial, or morainal deposits. Areas of discontinuous thin loess not mapped, but are present	Slopes reflect morphology of underlying unit; occurs on flat to moderate slopes. Drainage good to moderately good.	Irregular permafrost distribution. Ice lenses common in silty facies of unit.	Vulnerable to erosion on steep slopes and deflation if disturbed.	Dn, Dm, Dh, aDn, aDm, aDh, Dp-V	drift (Late Wisconsinan)	predominantly till; locally known to have high sand and stone content (aD) or boulder and cobble content (bD).	deposits. Discontinuous thin veneer of silt and peat commonly present.	(Dm), or moderately sloping (Dn). Slopes gentle to moderate. Drainage moderately good on hills, ridges, and slopes; moderately good to poor in swales and on broad flat areas.	sporadic except at high elevations and under some slopes having north aspect. Ground ice content generally low to medium where permafrost present; ground ice content may be high in areas of frozen lacustrine sediments.	determine exact composition of unit. Local thermokarst subsidence and ponding to be expected where frozen lacustrine sediments present; also slumps and flows on steep slopes.
Op, Ob, Ov Gm, Gh, bGh,	Organic deposit (Postglacial)	Peat and organic silts; may contain wood and wood fragments; up to 8 m thick.  Primarily gravel and sand with	broad flat areas in valleys throughout area. Underlain by pond sediments, drift, or less commonly by alluvium.  Most common in valleys but occurs	Generally flat surface with some scattered thermokarst lakes; imperfect to poor drainage; often marshy.  Hummocky (Gh) to undulating	Irregular permafrost distribution and high ground ice contents common in northern parts of area; permafrost commonly absent in southern parts of area.  Discontinuous permafrost probable	Vulnerable to thermokarst subsidence. Highly compressible in thawed state.  Vulnerable to moderate erosion on steep	Db, aDb, bDb, Db-V aDb-V	Drift blanket (Late Wisconsinan)	Undifferentiated till, outwash, and glaciolacustrine sediment; predominantly till. Generally has high sand and stone content (aD) or boulder and cobble content (bD), especially at high elevations.	Common on slopes throughout area. Glacial deposits common downslope from drift blanket, colluvium upslope. Usually underlain by bedrock, rarely by colluvium. Unit contains unmapped patches of colluvium, alluvium, and bedrock.	Gentle to moderately steep slopes. Generally well drained; gentle slopes underlain by permafrost moderately well to, less commonly, imperfectly drained. Rare active	Permafrost usually present at high elevations, although locally absent under south-facing slopes. Moderate to high ground ice content in upper part of unit on gentle slopes where permafrost present.	Further investigation required to determine exact composition of unit. On steep slopes mass movement may be a hazard to development. Disturbance may initiate active layer detachment flows if thermal regime altered on slopes underlain by permafrost. Snow patches accelerate
Gm-V Jenes V-mo 2.25-265. B. Mulley J.E. and Survey of Canad	complex	J.E., 1967; Geological Survey of Canada, Pa	rarely on uplands. Generally adjacent to outwash plains, valley trains, lacustrine and morainal landforms; stream terraces and floodplains commonly are incised within this unit. In places contains small unmapped areas of till or glaciolacustrine deposits. Commonly underlain by till, lacustrine deposits, alluvium, and more rarely by bedrock.	or rolling (Gm); in places channelled by meltwater. Well to moderately well drained except for depressions and broad flat areas having veneers or thin blankets of silt or peat.	in outwash north of Dezadeash River valley. Permafrost rare south of Dezadeash valley except at high elevations. Little ground ice except in silt and peat, which may have moderate to high ice content.	slopes if disturbed. Source of aggregate.					high elevations (as indicated on map), especially in Dezadeash Ranges and Coast Mountains		mass wastage as indicated by presence of nivation terraces.
leye) Soil Research Apriculture	Esker (Late Wisconsinan)	Gravel, little sand. May have thin veneer of silt or peat. Usually 10 to 50 m thick.		Individual or parallel ridges standing 10 to 50 m above surrounding terrain; in places occurs as aligned mounds of gravel or sand. Few kettles. Well drained except in depressions.	Permafrost generally absent. Negligible ground ice.	Stable surface. Source of aggregate.	Dv, aDv, rDv, bDv	Drift veneer (Late Wisconsinan)	Undifferentiated till, outwash, and glaciolacustrine sediment; generally has high rubble and boulder content (aD, rD, bD).	Isolated occurrences on glaciated slopes.  Morainal deposits common downslope from drift veneer, colluvium upslope; bedrock interspersed. Usually underlain by bedrock. Unit locally contains unmapped patches of colluvium, alluvium, and bedrock.	Gentle to steep slopes. Generally well drained. Creep and solifluction common forms of mass movement in active layer on steep slopes.	Surgas cut ravines and canyons.	
Gp, sGp, bgGp, Gt, Gf, Gd, sGd, Gn, bGn, Gp-G, Gp-V, Gf-G, Gn-G, sGd-P	Outwash plain, outwash fan, valley train, kame delta (Late Wisconsinan)	Primarily sand and gravel with veneer or thin blanket of silt and peat; some areas primarily sand (sG); rarely bouldery gravel (bgG) or boulders (bG). Probably averages 6 to 15 m thick but varies between 3 and 60 m.	Occurs predominantly in valleys. Commonly incised into morainal landforms; commonly stream terraces and floodplains incised within outwash. Generally underlain by till, lacustrine deposits, and more rarely by bedrock.	Flat to gently sloping; in places terraced, rarely channelled. Generally well to moderately well drained; imperfectly to poorly drained in channels, depressions, and on areas with veneer or thin blanket of silt and peat.	Permafrost rare in all outwash except where overlying veneer is thick. Little ground ice except in overlying silt and peat, which have moderate to high ice contents where frozen.	If frozen, veneer or thin blanket of silt and peat may be vulnerable to moderate thermokarst subsidence or erosion. Most outwash stable. Source of aggregate.	Ca, aCa, rCa, bCa	Talus apron (Neoglacial, mainly modern)	Angular cobbles and boulders having a relatively narrow size range in any one area; colluvium known or assumed to consist of cobble-sized rubble (aC, rC) or blocks (bC). Lithology of rock fragments same as adjacent rock cliffs. Thickness greater than 6 m, except near edges.	Common in mountains below steep bedrock cliffs. Toe of apron generally overlies drift and alluvium. Toe of apron may grade into protalus ramparts and rock glaciers.	Moderate to steep slopes. Well drained. Rock falls and slides and debris flows common.	Permafrost present, but due to coarseness of materials, talus not bound by ice.	Looseness of talus and mass movement a hazard to development. Potential source of aggregate, but probably will require crushing.
Gb, Gv	Wisconsinan)	Primarily gravel, some sand with veneer or thin blanket of silt and peat; bouldery in places.  Primarily silt and silty clay (L, fL),	Occurs along valley slopes.  Covers large area in Takhini valley; also	Gently to moderately steeply sloping. Generally moderately well to well drained, imperfectly drained on gentle slopes having veneer or thin blanket of silt and peat.  Commonly flat to gently sloping	Permafrost present at high elevations; active layer thick where unit well drained. Little ground ice except in overlying silt and peat, which have moderate ice contents.  Permafrost generally discontinuous and	Blanket of silt and peat may be vulnerable to moderate thermokarst subsidence or erosion on steep slopes at high elevation. Potential source of aggregate.	Cb, aCb, rCb, bCb	Colluvial blanket (Undifferentiated Pleistocene)	Poorly sorted diamicton with a significant proportion of cobbles and boulders; matrix primarily silt and sand, little clay. Lenses and layers of peat and gravel common. Layers of morainal, glaciofluvial, and glaciolacustrine sediments may be interlayered with material	Ubiquitous on slopes underlain by bedrock in unglaciated terrain. Common on moderate to steep slopes in glaciated terrain. Usually overlies bedrock. In places is interlayered with drift on slopes. May contain small unmapped areas of drift and alluvium.	Variable slope as indicated by modifier. Some gentle to moderate slopes are characterized by solifluction lobes, patterned ground, and nivation terraces. Creep and solifluction common forms of mass movement in active	Permafrost common, although it may be absent under south-facing slopes. Ground ice contents probably low to moderate, rarely high on gentle to moderate slopes.	Surface underlain by fine textured colluvium vulnerable to gullying and thermokarst erosion on moderate slopes; minor thermokarst subsidence may occur on gentle slopes if disturbed. Mass movement may be a hazard to development. Disturbance may initiate active layer
alp, glp, Ln, fLn, Lm, Lh, xLh, Lp-V, Ln-V, Lh-V, Lp-K fLp-K	plain (N - Neoglacial; otherwise Late Wisconsinan)	with some fine sand and lenses of sand and gravel; in places interbedded clay, silt, and fine sand (fL), sand or gravel (aL), gravel (gL), or interbedded clay, silt, sand and gravel (xL).	present along upper part of Dezadeash valley and its tributaries that were deglaciated prior to the establishment of postglacial drainage patterns.  Commonly underlain by other types of drift.	(Lp, Lm) but rarely has moderately steep slopes (Lh). Usually moderately well drained but in places imperfectly drained, especially near the base of north-facing steep valley walls. In areas of high ground ice content,	thin with low ice content in well drained areas having a southern aspect and lacking thermokarst depressions; permafrost nearly continuous with moderate to high ice content in imperfectly drained areas having northern aspect and thermokarst depressions. Thermokarst depressions	Vulnerable to thermokarst subsidence and erosion where sediment contains high ice content. Slumps and flows may follow disturbance on steep slopes. Sandy facies may be vulnerable to liquefaction in poorly drained areas where permafrsot is absent. Vulnerable to gullying on steep slopes if disturbed.	Parties 1		resulting from disintegration of bedrock. In places colluvium composed primarily of cobble-sized rubble (aC, rC) or blocks of local bedrock (bC). See marginal notes for information re bedrock lithologies.		layer. Isolated active layer detachment flows noted. Generally well to moderately well drained; some gentle slopes imperfectly drained.		detachment flows if drainage or thermal regime altered. Bedrock blocks potential source of aggregate.
Lb, flb,		Primarily silty clay, silt, or sand	Found in valleys that were deglaciated	thermokarst depressions are common. In isolated areas unit may be intensely gullied.  Gently to moderately sloping.	common in areas of high ice content, in places resulting in rolling (Lm) or hummocky (Lh) topography.  Permafrost discontinuous; most common	Vulnerable to thermokarst subsidence and	Cv, aCv, rCv, bCv	Colluvial veneer (Undifferentiated Pleistocene)	and boulders; matrix primarily silt and sand, little clay. Thin lenses and layers of peat and gravel common; few layers of drift and alluvium.	Common on steep alpine slopes; commonly covers glacially scoured rock. Usually overlies bedrock. May contain small unmapped areas of bedrock, drift, and alluvium.	Variable slope as indicated by slope modifier. May be rilled and gullied on steep slopes. Creep common form of mass movement. Generally well to moderately well drained.	Permafrost commonly present under north-facing slopes and at high elevations, but absent under south-facing slopes.	Vulnerable to shallow gullying and erosion on slopes, especially if permafrost present. Mass movement may be a hazard to development. Snow and ice avalanches a hazard on some slopes.
aLb, xLb, N FLb	blanket or veneer (N - Neoglacial; otherwise Late Wisconsinan)	(L, fL); in places contains lenses and layers of sand and gravel (xL). Flow areas predominantly cobbles and boulders (aL).	prior to the establishment of postglacial drainage patterns; large areas present in Shakwak Trench. Usually underlain by drift but in places, by colluvium and bedrock.	Usually moderately well drained, but in places imperfectly drained.	under imperfectly drained and north-facing slopes. Ground ice content generally moderate to high where permafrost present.	erosion where permafrost present. Slumps and flows may follow disturbance on steep slopes.	Çm, Çh,	Landslide.	In places colluvium composed primarily of cobble-sized rubble (rC, aC) or blocks of local bedrock (bC). See marginal notes for information re bedrock lithologies.  Landslide debris; extremely variable	Rare throughout area; generally associated			E
Lr, sLr	Lake strandlines (N - Neoglacial; otherwise Late Wisconsinan)	Sand and gravel. Generally 1 to 4 m thick.	Locally present at the margins of former lakes. See L, Lp, Lm, Ln, Lb for distribution of lakes. Usually underlain by drift but in places, by bedrock.	Narrow, gently sloping benches or low narrow ridges. Well to moderately well drained.	Permafrost generally absent.	Gravel and sand beaches potential source of small volumes of aggregate.	Çr, bÇh	debris flow (Postglacial; rarely Late Wisconsinan)	textures; large blocks of shattered bedrock and unsorted coarse textured diamicton most common; may contain drift and alluvium, either as distinct blocks or mixed with colluvium and shattered bedrock.	with glacially oversteepened valley walls or stream-cut escarpments. Generally overlies bedrock, drift, or coarse textured alluvium. May include small patches of unmapped alluvium.	Surface may be hummocky, ridged, or may mirror underlying slopes; ridges may be transverse or parallel to general slopes. Generally well to moderately well drained.	Permafrost present in slides at high elevations with ground ice contents negligible to small.	Landslides remain a hazard in areas where landslides have occurred previously.
Mh, bMh, N aMh, aMh	Disintegration moraine (N - Neoglacial; otherwise Late Wisconsinan)	Diamicton; high sand, silt, and stone contents; commonly crudely sorted and low in fines (aM); may contain high proportion of boulders and cobbles (bM). Between 3 and 40 m thick.	Locally present in valleys throughout area; bouldery facies (bM) restricted to alpine valleys. Unit commonly contains unmapped patches of outwash and, rarely, lacustrine deposits. Fine grained pond sediments and peat in many depressions. Generally underlain by drift, alluvium, and bedrock.	Surface hummocky with gentle to moderately steep slopes. Drainage good on hills and ridges, imperfect to poor in swales and depressions.	Permafrost generally absent or sporadic except in alpine valleys. Ground ice content low to medium where permafrost present.	Locally, areas with moderate ground ice content vulnerable to thermokarst subsidence. Snow patches accelerate mass wastage as indicated by presence of nivation terraces. Locally, a source of construction material, including aggregate, especially when processed (e.g. crushed, screened).	R1, R2, Rs, Rs-V	Bedrock outcrop	Clasts generally angular to semi-angular. Variable thicknesses to 30 m.  Varied bedrock types; mainly igneous and metamorphic rocks on Yukon Plateau; mixed igneous, volcanic, metamorphic, and sedimentary rocks in St. Elias and Coast mountains. See marginal notes for more information re bedrock lithologies.	Large areas of bedrock outcrop common in St. Elias and Cost mountains; small areas common in Kluane Plateau and Ruby Range. Bedrock also present along some scarps and ravines cut in valley bottoms.	Cliffs, arêtes, horns, and glacially scoured valley walls and hillocks common in glaciated areas. Stream-cut scarps in alpine valleys in places are cut in bedrock. Slopes generally steep or	Rock at high elevations, especially on north-facing slopes, may contain ice veins in fractures.	Rock generally a hinderance to economic development. Certain rock types may be potential sources of construction materials, including aggregate, if crushed.
	4	IBIS YRARELI									precipitous except in areas of glacially scoured hillocks. Rock falls and avalanches common in areas of steep bedrock. Well drained,		
		S NUL GENERALISMES									except in depressions in areas of glacially scoured hillocks.		
												vominedate that rise above surrounding relief more than 350 at have restrictive	

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