TERRAIN INVENTORY LEGEND

SYMBOL	NAME (AGE)	NATURE OF MATERIAL AND THICKNESS	DISTRIBUTION AND STRATIGRAPHY	GEOMORPHOLOGY AND DRAINAGE	PERMAFROST	OTHER ENGINEERING CHARACTERISTICS
I I_b I_v	Ice, valley glacier cirque glacier, cliff glacier (Neoglacial or modern)	Glacier ice with veneer or thin blanket of snow and firn. Large valley and outlet glaciers are probably up to 450 m thick; small valley glaciers range between 50 and 100 m thick; cliff glaciers 2 to 40 m thick.	Common to Icefield Ranges; few small valley glaciers, cirque glaciers, and cliff glaciers in Kluane Ranges southeast of Duke River. 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 developed by meltwater.	Glaciers may be at the pressure-melting point at their base; small glaciers 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.
${}_gA_p^A$ ${}_sA_p^A$ ${}_fA_p^A$	Active floodplain (Modern)	Generally gravel (g), rarely sand (s), or silt (f); gravel coarse on floodplains of high-gradient alpine streams; rare lenses of silt and clay; probably averages 3 to 10 m thick, but up to 50 m thick under large streams.	Active floodplains are broad along most major streams flowing out of St. Elias Mountains; most small streams originating in mountains have narrow active floodplains bordered by vegetated floodplains, low terraces, or stream-cut scarps. Small floodplains are underlain by alluvium or drift; large ones probably extend to bedrock.	Channel and bars form braided patterns that are constantly shifting; small scarps to 1.5 m high with ripple marks, ellipsoidal scours and silt volcanoes; no vegetation; inundated with water during spring flood, times of high precipitation, and intense glacier melt.	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. Aggregate source.
A_p ${}_gA_p$	Floodplain	Generally gravel with veneer of sand and silt; veneer commonly has significant organic content and cap of peat; in places without fine textured veneer (${}_gA$); probably averages 3 to 10 m thick adjacent to large streams.	Border 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. Small floodplains are underlain by alluvium or drift; large ones probably extend to bedrock.	Few channels are present on surface; generally well drained except in channels and on the inner parts of broad floodplains where pools of water may be present; inundated with water during high floods; shallow water table.	Permafrost absent except under small floodplains at high elevations.	Annual flooding probable. Veneer vulnerable to minor channelling if disturbed. Generally stable surface. Aggregate source.
${}_fA_f$ ${}_fA_a$ ${}_fA_{ap}$ ${}_fA_p$ ${}_xA_p$	Alluvial plain, alluvial fan, alluvial apron (Undifferentiated Pleistocene, mainly Postglacial)	Interbedded sand, silt, clayey silt, commonly high in organic content; contains lenses of peat and much wood; veneer or blanket of peat covers surface. Rarely contains high content of tephra (${}_xA$). Deposits up to 60 m thick and thin towards edges.	Common in valleys of unglaciated Yukon Plateau, but not limited to this physiographic province. May include small areas of stream terrace and floodplain. Generally underlain by colluvium or bedrock, and in some places by drift or coarse alluvium.	Flat to gently sloping. Generally imperfectly or poorly drained, in some places moderately well drained.	Permafrost established throughout unit; taliks under thermokarst lakes. Few pingos present. High ground ice contents in form of ice lenses and ice wedges.	Surface vulnerable to moderate and major thermokarst subsidence and erosion and to drainage modification if disturbed.
A_f ${}_gA_f$ ${}_xA_f$ ${}_gA_f^N$	Alluvial fan (Postglacial, rarely Late Wisconsinan; otherwise N-Neoglacial)	Generally gravel with veneer of sand and silt; veneer commonly has significant organic content and cap of peat; in places gravel covered by thick blanket of interbedded volcanic tephra and fine textured sediments (${}_xA_f$); in places gravel is without veneer or blanket (${}_gA_f$). Fans with steep slopes in alpine areas consist of coarse bouldery gravels. Probably average between 3 and 35 m thick.	Common along edges of glaciated valleys. Largest fans present along trunk valleys. Toe of fan generally impinges on floodplain and stream terraces. May include small unmapped areas of floodplain.	Gently to moderately sloping. Generally moderately well to well drained; gently sloping fans with thick veneers or blankets may be imperfectly drained.	North and west of Kluane Lake permafrost common in fans, except rarely in those lacking a veneer or blanket. South and east of Kluane Lake most alluvial fans having no or negligible veneers of fine textured sediment are free of permafrost. Moderate to high ice contents present in peat and fine textured materials. Water under artesian pressure in taliks and below permafrost.	Surface vulnerable to moderate thermokarst subsidence and erosion if disturbed where icy sediments cap fans. Rapid shifts in stream position across surface of alluvial fan.
A_t ${}_gA_t$ A_t^N ${}_gA_t^N$	Stream terrace (Postglacial; otherwise N-Neoglacial)	Generally gravel with veneer of sand and silt; veneer commonly has significant organic content and cap of peat; veneer thickest on higher terraces. In places without fine textured and peat veneers (${}_gA$). Generally between 3 and 15 m thick, but ranges between 1.5 and 50 m	Border all streams. Bordered by active floodplains, low terraces, or stream-cut scarps. May include unmapped floodplains in small valleys. Underlain by alluvium, drift, or bedrock.	Stand from 1.5 to more than 30 m above streams. Surfaces generally flat except for minor terrace scarps and rare channel traces. Terraces without veneer generally well to moderately well drained. Veneered terraces moderately well drained; poorly drained in channels and low swales.	Permafrost established under most terraces north and west of Kluane Lake; permafrost thickest on veneered high terraces. Ground ice absent except in peat blanket and silty sandy veneer. Water under artesian pressure in taliks and below permafrost.	Stable surface except where terraces capped by thick peat or ice-rich silt and sand leading to moderate thermokarst subsidence and erosion. Outer edges of terraces generally most favourable locations for development. Aggregate source.
${}_fA_t$	Stream terrace (Postglacial)	Silt and silty clay capped by thin peat; estimated 3 to 10 m thick.	Border a few creeks. Bordered by various units. May include unmapped floodplain. Generally underlain by coarser alluvium or outwash.	Stand 1.5 to 10 m above streams. Surface flat except for terrace scarps and channel traces. Moderately well to poorly drained.	Moderate to high ice contents probable in continuous permafrost.	Surface vulnerable to gullying and moderate thermokarst subsidence and erosion if disturbed.
A_b	Alluvial blanket (Postglacial)	Interbedded silt, sand, and gravel	Common along edges of glaciated valleys. Blanket commonly overlies drift or coarse alluvial deposits.	Gently to moderately sloping. Moderately well drained. Surface water may cross blanket in the form of numerous small rills.	Permafrost common. Ground ice contents generally low to moderate.	Surface water may need controlling in case of development. Icings possible.
${}_xA_b$	Alluvial blanket (Postglacial, mainly Neoglacial)	Interbedded volcanic tephra, silt, sand, and peat; few lenses of gravel. Volcanic tephra mainly coarse sand and fine gravel size.	Common in area where White River Ash is thickest and along edges of glaciated valleys. Blanket usually overlies drift or coarse alluvial deposits.	Gently to moderately sloping. Generally imperfectly to moderately well drained. Surface water may cross blanket in the form of numerous small rills.	Permafrost common. Ground ice contents generally moderate, locally high.	Surface vulnerable to moderate thermokarst subsidence and erosion if disturbed. Surface water may need controlling in case of development. Icings possible.
E_r $\frac{{}_xE_v}{E_r}$	Sand dunes (Early Postglacial)	Sand; generally with veneer of volcanic tephra and peat (${}_xE_v$). Unit is 2 to 30 m thick.	Large area of dunes west of Donjek River near Shakwak Trench. Generally overlies outwash, less commonly morainal, colluvial, alluvial, and lacustrine deposits.	Mainly parabolic and linear ridges standing 5 to 30 m above surrounding terrain. Ridges moderately well drained; depressions imperfectly to poorly drained.	Permafrost present in Donjek River area. Variable ground ice contents, locally high.	Vulnerable to thermokarst erosion on slopes and thermokarst subsidence in depressions.
${}_fE_b$ E_b	Eolian blanket (Postglacial, mainly Neoglacial)	Tephra blanket (${}_vE$) consists of sand- to fine gravel-sized material; may contain thin layers of silt, fine sand, or peat. Rarely, blanket consists of fine sand and silt with extremely high organic contents (${}_fE$). Tephra blanket thickest near Natazhat Glacier and thins to northeast.	Tephra blanket located along line projecting from Natazhat Glacier northeast to where Edith Creek flows into Shakwak Trench; primarily on flat to moderately sloping surfaces. Highly organic sandy silt covers slopes west of Donjek River and north of Shakwak Trench. Blanket overlies various materials.	Slopes reflect morphology of underlying unit; tephra blanket generally on flat to moderate slopes; organic sandy silt blanket on variable slopes, including steep slopes. Drainage moderately good; imperfectly to poorly drained on some gentle slopes.	Permafrost ubiquitous. Ground ice contents moderate to high, mainly in the form of ice lenses. Ice wedges noted in highly organic silty sand, even on steep slopes.	Vulnerable to thermokarst subsidence and erosion. Tephra has extremely low angle of repose in thawed state.
${}_vE_v$ ${}_xE_v$	Eolian veneer (Neoglacial)	Mainly tephra, sand- and silt-sized; may contain thin layers of silt, fine sand, or peat.	Veneer adjacent to tephra blanket between Natazhat Glacier and juncture of Edith Creek and Shakwak Trench; extends east to near mouth of Kluane River; primarily on flat to moderately sloping surfaces. Veneer overlies various materials. Patches and very thin layer of tephra present throughout much of area, especially on gentle slopes near mapped eolian veneer. Loessal veneer common throughout and adjacent to glaciated areas, but distribution sporadic and not mapped.	Slopes reflect morphology of underlying unit; tephra veneer on flat to moderate slopes. Drainage usually moderately good; imperfectly to poorly drained on some gentle slopes.	Permafrost ubiquitous in underlying materials. Ground ice contents variable.	Tephra has extremely low angle of repose in thawed state.
(Printed in red) ▨	Organic deposit (Postglacial)	Peat and organic silts; in places contains wood and wood fragments; varies between 1.5 and 6 m thick where mapped; not mapped if less than 1.5 m thick.	Common in swales, depressions, and on broad flat areas in valleys throughout area; less common south and east of Kluane Lake in areas where permafrost is absent. Along Donjek River valley peaty organic silt draped over undulating surface. Usually underlain by pond sediments, drift, or less commonly alluvium.	Generally flat surface with some scattered thermokarst lakes and ice-wedge troughs; imperfect to poor drainage; commonly marshy. Along Donjek River valley gently to moderately sloping; moderately well drained.	Permafrost ubiquitous. High ground ice contents.	Vulnerable to thermokarst subsidence. Highly compressible in thawed state.
G_m, G_h ${}_gG_m$, ${}_gG_h$ G_t, G_t^2 G_m^2, G_h^2 ${}_gG_t^2$	Kame, Kame terrace, Kame and kettle complex (Late Wisconsinan; otherwise 2-Early(?) Wisconsinan)	Primarily gravel, some sand with veneer or thin blanket of silt and peat; usually gravel has negligible capping of silt and peat (${}_gG$). Varies between 13 and 60 m thick.	Covers large areas in Wellesley Basin; common in Shakwak Trench and valleys of Kluane Plateau. Generally adjacent to outwash plains, valley trains, and morainal land forms; stream terraces and floodplains commonly are incised within this unit. In some places contains small unmapped areas of till or glaciolacustrine deposits, usually underlain by till, lacustrine deposits, alluvium, and more rarely, bedrock.	Hummocky (h) to undulating or rolling (m). Well to moderately well drained except for depressions and broad flat areas having veneers or thin blankets of silt or peat.	Permafrost in outwash north and west of Kluane Lake. Thick active layer in well drained outwash. Little ground ice except in overlying silt and peat, which have moderate to high ice contents.	Veneer or thin blanket of silt and peat may be vulnerable to moderate thermokarst subsidence or erosion. Source of aggregate.
${}_gG_r$	Esker (Late Wisconsinan)	Gravel, little sand. In places thin veneer of silt or peat. Usually 10 to 50 m thick.	Isolated occurrences throughout glaciated lowlands. Generally found within glaciofluvial or morainal deposits. Usually underlain by till, more rarely, bedrock.	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 in eskers north and west of Kluane Lake. Thick active layer. Negligible ground ice.	Stable surface. Source of aggregate.
G_p ${}_gG_p$ G_p^2 ${}_gG_p^2$	Outwash plain, outwash fan, valley train (Late Wisconsinan; otherwise 2-Early(?) Wisconsinan)	Generally sand and gravel with veneer or thin blanket of silt and peat, with latter thicker on older (G^2) features; commonly sand and gravel deposit has negligible capping of silt and peat (${}_gG$). Probably averages 6 to 15 m thick, but varies between 3 and 60 m thick.	Covers large areas in Wellesley Basin; significant areas along valleys and basins of Kluane Plateau, Shakwak Trench, and St. Elias Mountains. Usually incised into morainal landforms; similarly stream terraces and floodplains commonly are incised within outwash. Usually underlain by till, lacustrine deposits, alluvium, and more rarely, bedrock.	Flat to gently sloping, in places terraced, more rarely channelled; pitted as indicated by symbols, pits generally 3 to 30 m deep. 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 in all outwash north and west of Kluane Lake. Thick active layer in well drained outwash. Water under artesian pressure in taliks and below permafrost. Little ground ice except in overlying silt and peat, which have moderate to high ice contents.	Veneer or thin blanket of silt and peat may be vulnerable to moderate thermokarst subsidence or erosion. Most outwash stable. Source of aggregate.
${}_gG_b$ G_b G_b^2	Glaciofluvial blanket (Late Wisconsinan; otherwise 2-Early(?) Wisconsinan)	Primarily gravel, some sand with veneer or thin blanket of silt and peat; commonly gravel has negligible capping of silt and peat (${}_gG$). May be up to 20 m thick.	Occur along slopes of glaciated valleys in Kluane Plateau and St. Elias Mountains.	Gently to moderately steeply sloping. Generally moderately well to well drained, imperfectly drained on gentle slopes with veneer or thin blanket of silt and peat.	Permafrost present north and west of Kluane Lake and at high elevations. Thick active layer where unit well drained. Little ground ice except in overlying silt and peat, which have moderate ice contents.	Blanket of silt and peat may be vulnerable to moderate thermokarst subsidence or erosion. Potential source of aggregate.
L_p L^2 L^N L_m L_h	Lacustrine plain (Late Wisconsinan; otherwise 2-Early Wisconsinan N-Neoglacial)	Primarily silt and silty clay; some fine sand; some lenses of sand and gravel. Peat blanket common. Ranges from 2 to 70 m thick, usually greater than 10 m.	Common in valleys in Kluane Plateau that were deglaciated before their present drainage outlets were free of ice or incised to present levels. Locally present in Duke Depression, Kluane Ranges, and along southern edge of Klondike Plateau. Usually underlain by other types of drift.	Flat to gently sloping. Usually imperfectly drained, but commonly poorly or moderately well drained. In areas of high ground ice contents, slumps and flows common along streamcut scarps and disturbed areas.	Permafrost ubiquitous except at low elevations south of Kluane Lake. Ground ice contents variable. Thermokarst depressions common, in places leading to rolling (L_m) or hummocky (L_h) topography.	Vulnerable to thermokarst subsidence and erosion. Slumps and flows may follow disturbance on steep slopes.
L_b	Lacustrine blanket (Late Wisconsinan)	Usually silty clay, silt, or sand; some lenses and layers of sand and gravel. Peat blanket common.	Common in valleys in Kluane Plateau, Kluane Ranges, Duke Depression, and along southern edge of Klondike Plateau where valleys were deglaciated prior to the establishment of postglacial drainage patterns. Usually underlain by drift and less commonly by colluvium.	Gently to moderately sloping. Usually imperfectly drained, but commonly poorly or moderately well drained. Slumps and flows common along stream-cut scarps and disturbed areas.	Permafrost ubiquitous. Ground ice contents generally moderate to high.	Vulnerable to thermokarst subsidence and erosion. Slumps and flows may follow disturbance on steep slopes.
L_r	Lake strandlines	Sand and gravel. Generally 1 to 4 m thick.	Locally present at the margins of former lakes. See L, L_p, L_m, L_h, L_b, for distribution of lakes. Usually underlain by drift.	Narrow gently sloping benches or low narrow ridges. Well to moderately well drained.	Permafrost common but is absent south of Kluane Lake. Ground ice contents low except in beaches composed of fine sand.	Fine sand beaches possibly vulnerable to thermokarst erosion. Gravel and sand beaches potential source of small volumes of aggregate.
M_h ${}_aM_h$ ${}_aM_h^N$	Disintegration moraine (Late Wisconsinan; otherwise N-Neoglacial)	Diamicton; high sand, silt, and stone contents; commonly crudely sorted and low in fines (${}_aM$). Between 3 and 40 m thick.	Common in Duke Depression, Wellesley Basin, valleys in northwestern part of Kluane Ranges, and Kluane Plateau. Usually associated with other glacial deposits. Unit commonly contains unmapped patches of outwash and rarely, lacustrine deposits. Fine grained pond sediments and peat in many depressions. Generally underlain by drift and alluvium.	Surface hummocky with gentle to moderately steep slopes. Drainage good on hills and ridges, imperfect to poor in swales and depressions.	Permafrost established throughout unit. Ground ice contents low except in upper part of unit in swales and on broad flat areas where ground ice contents moderate to high. Ice wedges common.	Locally, areas with moderate to high ground ice contents vulnerable to thermokarst subsidence. Trenches will develop over ice wedges if exposed. Ponding in depressions possible. Locally, a source of construction material, including aggregate.
M_r ${}_aM_r$ M_r^2 M_r^N	Morainic ridge (Late Wisconsinan; otherwise 2-Early(?) Wisconsinan, N-Neoglacial)	Diamicton; high sand, silt, and stone contents; locally contains crudely sorted material and is low in fines (${}_aM$). Generally 10 to 50 m thick, rarely to 100 m thick.	Groups of ridges common near upper reaches of Hazel Creek and west of Jarvis River. Individual ridge common along limit of Early(?) Wisconsinan, Late Wisconsinan, and Neoglacial glaciations. Till and colluvial blanket common upslope from ridges. Underlain by drift, colluvium, and rarely, bedrock.	Ridge(s) having moderate to steep slopes; moderately well to well drained.	Permafrost throughout unit. Thick active layers on some south-facing slopes. Negligible ice contents. Locally, ice wedges present.	Trenches will develop over ice wedges if exposed. Locally, a source of construction material, including aggregate.
M_m M_m^2 ${}_aM_m$ ${}_aM_m^2$ ${}_aM_m^N$	Till plain, disintegration moraine (Late Wisconsinan; otherwise 2-Early(?) Wisconsinan, N-Neoglacial)	Diamicton; high sand, silt and stone contents; locally may be crudely sorted and low in fines (${}_aM$). Probably between 3 and 40 m thick.	Common in many valleys in Kluane Ranges, Kluane Plateau, Ruby Range, and in Duke Depression, Wellesley Basin, and Shakwak Trench. 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 older disintegration moraine (M^2) thicker than on younger moraine (M). Generally underlain by drift or alluvium.	Surface generally rolling to undulating with gentle to moderate slopes; in places fluted or drumlinized. Drainage moderately good to good; in swales and on broad flat areas underlain by permafrost drainage may be imperfect to poor.	Permafrost throughout unit north and west of Kluane Lake; sporadic and mainly confined to swales near Kluane Lake; generally absent east of Kluane Lake in Shakwak Trench. Ground ice contents low; in upper part of unit in swales and on broad flat areas ground ice contents moderate to high. Ice wedges common in areas of permafrost.	Areas with moderate to high ground ice contents vulnerable to thermokarst subsidence. Trenches will develop over ice wedges if exposed. Ponding in depressions possible. Hills and ridges generally stable surfaces. Locally a source of construction material, including aggregate.
M_p M_p^2	Till plain (Late Wisconsinan; otherwise 2-Early(?) Wisconsinan)	Diamicton; high sand, silt, and stone contents; texture of basal part reflects underlying materials. Varies between 1 and 50 m thick, averages 3 to 10 m thick.	Common in base of Shakwak Trench, Wellesley Basin, and on flat surfaces of Duke Depression. Older till plain (M^2) also present in southern part of Klondike Plateau. Usually associated with other glacial deposits and underlain by drift or alluvium. Discontinuous thin veneer of silt and peat overlying till on older till plain (M^2) generally thicker than on younger till plain (M).	Flat to gently sloping. In places fluted or with low broad drumlins. In areas of permafrost, drainage imperfect to poor; in areas free of permafrost drainage moderately good.	Continuous permafrost north and west of Kluane Lake; permafrost absent or sporadic in Shakwak Trench southeast of Kluane Lake. Ground ice contents locally high in upper part of unit, especially on older till plain (M^2); ground ice in the form of ice lenses and wedges.	Local thermokarst subsidence in areas where ground ice contents are high. Ponding possible in all thermokarst areas if disturbed.
M_b M_b^2 ${}_aM_b$ ${}_aM_b^2$ ${}_aM_b^N$	Till blanket (Late Wisconsinan; otherwise N-Neoglacial, 2-Early(?) Wisconsinan)	Diamicton; high sand, silt, and stone contents; locally may be crudely sorted, low in fines, or high in rubble or boulder content (${}_aM$).	Common on slopes throughout glaciated parts of Yukon Plateau and St. Elias Mountains. Other morainal deposits common downslope from till blanket and colluvium upslope. Discontinuous thin veneer of silt and peat on older till blanket (M^2) thicker than on younger till blanket (M). Usually underlain by bedrock rarely colluvium. Unit contains unmapped patches of outwash, 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 layer detachment flow.	Permafrost present north and west of Kluane Lake and at high elevations. Locally absent on southerly facing slopes near Kluane Lake and to southeast of Kluane Lake. Moderate to high ground ice contents in upper part of unit on gentle slopes where permafrost present; ice wedges common.	Areas with moderate to high ground ice contents vulnerable to thermokarst subsidence and erosion. 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.
M_v	Till veneer (Late Wisconsinan)	Diamicton; high sand, silt, and stone contents; locally may be crudely sorted, low in fines, or high in rubble or boulder content.	Common on glaciated slopes of St. Elias Mountains, Shakwak Trench, Ruby Range, and Kluane Plateau. Morainal deposits common downslope from till veneer, and colluvium upslope; bedrock interspersed. Usually underlain by bedrock. Unit locally contains unmapped patches of outwash, colluvium, alluvium, and bedrock.	Gentle to steep slopes as indicated by modifier. Generally well drained. May be rilled and gullied on steep slopes. Creep and solifluction common forms of mass movement in active layer on steep slopes.	Permafrost present in thick veneer on northerly facing slopes north and west of Kluane Lake and at high elevations. Permafrost present in underlying materials north and west of Kluane Lake and at high elevations except for southerly facing slopes.	Vulnerable to gullying and thermokarst erosion on steep slopes. Mass movement may be a hazard to development.
MR MR^L	Rock glacier (Neoglacial; otherwise L-Late Wisconsinan or Early Postglacial)	Primarily bouldery rubble, rarely substantial content of sand or fines. Generally 10 to 30 m thick.	Common throughout Kluane Ranges; few in Icefield Ranges; isolated occurrences in Ruby Range. Older rock glaciers (MR^L) located along Duke Depression. Commonly bordered by talus aprons and rock cliffs. Core may contain glacier ice, otherwise underlain by bedrock; lower part may overlie drift, alluvium, or colluvium.	Vary from tongue-shaped to lobate-shaped to spatulate-shaped. Surfaces either gently to moderately sloping or with many ridges and furrows. Distal edge generally marked by steep slope. Young rock glaciers subject to continuous downslope movement.	Permafrost present, but rubble only bound by ice at depth because of its coarse nature.	Mass movement possible problem to development. Potential source of construction material, including aggregate.
$\frac{M}{I}$, $\frac{{}_aM}{I}$ $\frac{{}_aM_h}{I}$, $\frac{{}_xM_h}{I}$ $\frac{{}_aM_r}{I}$, $\frac{{}_xM_r}{I}$ $\frac{{}_aM_p}{I}$	Ice-cored moraine and debris-covered glacier (Neoglacial)	Primarily rubble, generally bouldery, over glacier ice. Ice-cored moraines of Natazhat and Klutlan glaciers locally tephra-rich (${}_xM$); Klutlan ice-cored moraines commonly coarse textured diamicton (${}_aM$). Debris thicknesses over ice range from negligible to 5 m, rarely thicker.	Common along northeastern edge of Icefield Ranges; few occurrences in Kluane Ranges. Located on lower reaches or terminii of glaciers in alpine valleys. Contains patches of unmapped outwash and, less commonly, glaciolacustrine deposits. Underlain by older drift, colluvium, or bedrock.	Large ice-cored moraines characterized by chaotic 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 interrupted by ridges and furrows, rare ice-thaw lakes, and incised streams. Distal edge generally marked by steep slope.	Portion of underlying ice may be at pressure-melting point, remainder at 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.	Development hazardous because of continued ablation and slope instability; also risk of disturbance due to glacier surge or advance. Potential source of construction material, including aggregate.
D_h	Hummocky drift (Late Wisconsinan)	Undifferentiated till, outwash, glaciolacustrine sediment. Variable thickness.	Locally present in valleys of Kluane Plateau.	Surface hummocky with gentle to moderately steep slopes. Drainage good on hills and ridges, imperfect to poor in swales and depressions.	Permafrost ubiquitous. Ground ice contents generally low; in upper part of unit in swales and on broad flat areas, ground ice contents moderate to high. Ice wedges common.	Further investigation required to determine exact composition of unit. Possible local source of aggregate.
D_p D_p^2 D_m D_m^2	Drift plain (Late Wisconsinan; otherwise 2-Early(?) Wisconsinan)	Undifferentiated till, outwash, glaciolacustrine sediment; predominantly till. Variable thickness.	Common in glaciated valleys and basins throughout area; usually associated with other glacial deposits. Discontinuous thin veneer of silt and peat thicker on older drift plain (D^2) than younger drift plain (D).	Flat (p) to undulating or rolling (m) Slopes gentle to moderate. Drainage moderately good on hills, ridges, and slopes; imperfect to poor drainage in swales and on broad flat areas.	Permafrost ubiquitous. Ground ice contents locally high in upper part of unit, especially on older drift (D^2).	Further investigation required to determine exact composition of unit. Local thermokarst subsidence and ponding to be expected if disturbed.
D_b D_b^2	Drift blanket (Late Wisconsinan; otherwise 2-Early(?) Wisconsinan)	Undifferentiated till, outwash, glaciolacustrine sediment; predominantly till.	Common on slopes throughout Kluane Ranges, Duke Depression, and Yukon Plateau. Glacial deposits common downslope from drift blanket, and colluvium upslope. Discontinuous thin veneer of silt and peat on older drift blanket (D^2) thicker than on younger drift blanket (D). Usually underlain by bedrock, rarely 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 layer detachment flow.	Permafrost present north and west off Kluane Lake and at high elevations. Locally absent on southerly facing slopes near Kluane Lake and to southeast of Kluane Lake. Moderate to high ground ice contents in upper part of unit on gentle slopes where permafrost present; ice wedges common.	Further investigation required to determine exact composition of unit. Areas with high ground ice contents vulnerable to thermokarst subsidence and erosion. 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.
D_v D_v^2	Drift veneer (Late Wisconsinan; otherwise 2-Early(?) Wisconsinan)	Undifferentiated till, outwash, and glaciolacustrine sediment; probably high in rubble and boulder content.	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 outwash, 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.	Permafrost present in thick veneer on northerly facing slopes north and west of Kluane Lake and at high elevations. Permafrost present in underlying materials northwest of Kluane Lake and at high elevations, except for southerly facing slopes.	Vulnerable to gullying and thermokarst erosion on steep slopes. Mass movement may be a hazard to development. Further investigation is required to determine exact composition of unit.
D D^2	Drift (Late Wisconsinan; otherwise 2-Early(?) Wisconsinan)	Interbedded till, outwash, and glaciolacustrine sediment; till probably major component.	Subsurface unit mapped under colluvial, eolian, alluvial, morainal, and lacustrine blankets in valleys and basins throughout area.	Slope indicated by modifier; generally gentle to moderate. Drainage - see description for overlying unit.	Permafrost present north and west of Kluane Lake and at high elevations. Ground ice contents variable, high contents probable in upper part of unit and in fine textured drift.	Further investigation is required to determine exact composition of unit. Also, see comments for overlying unit.
C_a	Talus apron (Neoglacial, mainly modern)	Angular cobbles and boulders having relatively narrow size range in any one area. Lithology of rock fragments same as adjacent rock cliffs. Greater than 6 m thick 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. Rock falls and slides and debris flows common.	Moderate to steep slopes. Well drained.	Permafrost present, but due to coarseness of materials, talus not bound by ice.	Looseness of talus and potential for mass movement are hazards to development. Potential source of aggregate.
C_t ${}_bC_t$	Altiplanation terrace (Pleistocene)	Rubble, mixed size, angular boulders and cobbles in finer grained matrix. In a few places, primarily boulders (${}_bC$). Unconsolidated material probably averages 1 to 3 m thick; few areas of exposed fractured bedrock.	Common near crest of hills and ridges in unglaciated parts of Yukon Plateau and Kluane Ranges. Generally underlain by bedrock.	Benches having gentle slopes are separated by 3 to 30 m high steep scarps. Drainage ranges from imperfect to moderately good.	Permafrost established in terraces. Ground ice contents low to moderate.	Negligible thermokarst subsidence; possible minimal thermokarst erosion.
C_b ${}_bC_b$ ${}_gC_b$	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 resulting from disintegration of bedrock. In places colluvium composed primarily of blocks of local bedrock (${}_bC$), rarely of gravel (${}_gC$). See marginal notes for information re bedrock lithologies.	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. Blanket may be gullied and rilled, especially on steep slopes. Some gentle to moderate slopes are characterized by solifluction lobes and patterned ground. Creep and solifluction common forms of mass movement in active layer. Isolated active layer detachment flows noted. Generally well to moderately well drained; some gentle slopes imperfectly drained.	Permafrost common, although it may be absent on southerly facing slopes south and east of Kluane Lake. Ground ice contents probably low to moderate, rarely high on gentle to moderate slopes where ground ice is usually in the form of ice lenses and wedges.	Surface vulnerable to gullying and thermokarst erosion on moderate slopes; on gentle slopes thermokarst subsidence may also be a factor if disturbed. Mass movement may be a hazard to development. Disturbance may initiate active layer detachment flows if drainage or thermal regime altered. Bedrock blocks potential source of aggregate.
C_v ${}_bC_v$	Colluvial veneer (Undifferentiated Pleistocene)	Poorly sorted diamicton with significant proportion of cobbles and boulders; matrix primarily silt and sand, little clay. Thin lenses and layers of peat and gravel common; few layers of drift and alluvium. In places colluvium composed primarily of blocks of local bedrock (${}_bC$). See marginal notes for information re bedrock lithologies.	Common on steep alpine slopes; commonly covers glacially scoured rock. Usually overlies bedrock. May contain small unmapped areas of drift and alluvium.	Variable slope as indicated by modifier. May be rilled and gullied on steep slopes. Creep and solifluction common forms of mass movement in active layer. Generally well to moderately well drained.	Permafrost present in thick veneer on northerly facing slopes north and west of Kluane Lake and at high elevations. Permafrost present in underlying materials north and west of Kluane Lake and at high elevations except on southerly facing slopes.	Vulnerable to shallow gullying and thermokarst erosion on slopes, especially if permafrost present. Mass movement may be a hazard to development. Snow and ice avalanches a hazard on some slopes.
C_L C_{Lh} C_{Lr}	Landslide, debris flow (Postglacial; rarely Late Wisconsinan)	Landslide debris extremely variable, 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. Clasts generally angular to semi-angular. Variable thicknesses to 30 m common.	Rare in Yukon Plateau; generally associated with glacially oversteepened valley walls or stream-cut escarpments in St. Elias Mountains. Most common in areas of poorly indurated Tertiary sediments and volcanic pyroclastics, especially if rocks have been tectonically crushed. Generally overlies bedrock, drift, or coarse textured alluvium. Unmapped small patches of alluvium on surface.	Surface may be hummocky or ridged or may mirror underlying slopes; ridges may be transverse or parallel to general slopes. Few landslides characterized by scarps, some lacking vegetation and indicating recent or active movement of a slump block. Generally well to moderately well drained.	Permafrost present in slides north and west of Kluane Lake and at high elevations. Ground ice contents negligible to small.	Landslides remain hazard in areas where landslides have occurred. A few landslides show signs of continued movement along planes of weakness.
R	Bedrock outcrop	Varied bedrock types; mainly igneous and metamorphics in Yukon Plateau; mixed igneous, volcanic, metamorphic and sedimentary rocks in St. Elias Mountains. See marginal notes for more information re bedrock lithologies.	Large areas of bedrock outcrop common in St. Elias Mountains; smaller areas common in Kluane Plateau and Ruby Range. Bedrock confined to few scarps in Wellesley Basin and Klondike Plateau. Unit contains many unmapped small areas of colluvium and drift.	Arêtes, horns, glacially scoured valley walls and hillocks common in glaciated areas of St. Elias Mountains, Kluane Plateau, and Ruby Range. Cliffs and stream-cut scarps common in St. Elias Mountains; isolated occurrences throughout Wellesley Basin and Klondike Plateau. Slopes generally steep or precipitous except in areas of glacially scoured hillocks. Rock falls and avalanches common in areas of steep bedrock. Well drained, except in depressions in areas of glacially scoured hillocks.	Rock in valleys northwest of Kluane Lake and at high elevations, especially on north-facing slopes. Contains veins of ice in fractures.	Rock generally an impediment to economic development. Certain rock types may be potential sources of construction materials, including aggregate.
R_c	Castled bedrock outcrop; tor	Varied bedrock types, but primarily igneous and metamorphic. See marginal notes for more information re bedrock lithologies.	Common on crests of ridges and hills of Klondike and Kluane plateaus. Scattered outcrops above glacial limits throughout remainder of area.	Steep-sided and well drained.	Veins of ice in fractured rock at high elevations, especially on north-facing slopes.	Potential source of construction material including aggregate.