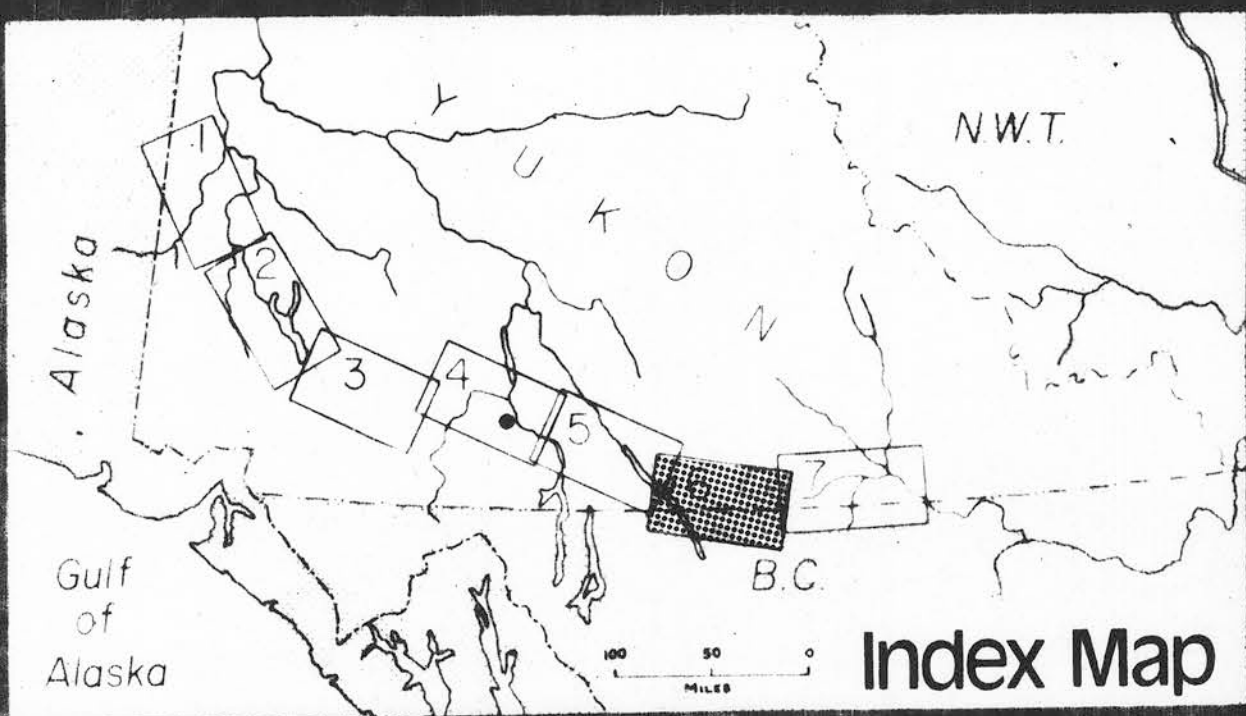
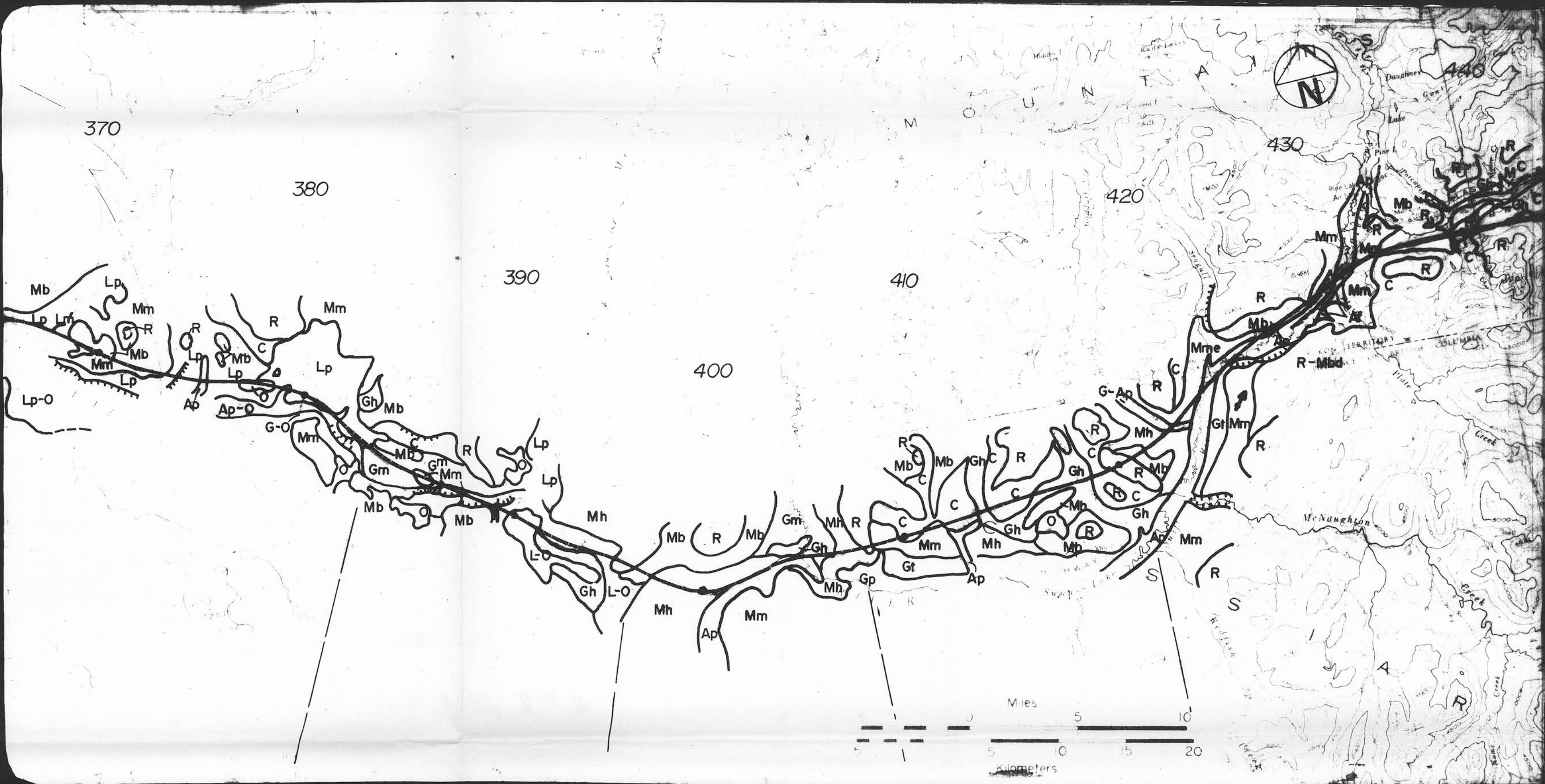


MAP 6
TERRAIN OVERVIEW
ALCAN PIPELINE
YUKON TERRITORY



Refer to Geologic Legend
on Front Page.

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PHYSIOGRAPHIC UNITS		NISUTLIN PLATEAU	CASSIAR MOUNTAINS IN EAST TESLIN PLATEAU IN WEST	CASSIAR MOUNTAINS IN EAST TESLIN PLATEAU IN WEST	CASSIAR MOUNTAINS	CASSIAR MOUNTAINS
PHYSICAL	TERRAIN TYPES	Gently rolling till plain in western part, glaciolacustrine sand plain in eastern part, may be fine grained sediments in vicinity of Hay's Creek, extensive organic patches in glaciolacustrine plain.	Gently rolling glaciofluvial and till plains in western part and glaciolacustrine sand and organic plains in eastern part.	Hummocky till moraine and granular glaciofluvial deposits; adjacent to floodplain of Swift River.	Colluvium and scattered bedrock mainly, some gently rolling stoney till and hummocky glaciofluvial granular deposits; bedrock in the eastern part.	Mainly gently rolling till plain but includes alluvium of Swift River in central part and bedrock in the eastern part.
	LOCAL RELIEF AND DRAINAGE	Gently rolling, rare abrupt scarp, poor drainage near Hay's Creek and in organic terrain; till well drained.	Western part well drained, poor to moderate in eastern part; abrupt scarps at Morley River Crossing, otherwise low relief.	Low to moderate relief, rare steep minor slopes; well drained, minor small creeks.	Low to moderate relief, some steep parts in bedrock areas; minor abrupt scarps; well drained; numerous small streams.	Low relief in general, some abrupt scarps in eroded till and adjacent to Swift River; steep slopes in bedrock terrain; well drained except Swift River subject to flood.
	GROUND ICE AND PERMAFROST	Possible ground ice pockets in organic and glaciolacustrine sediments. Area of discontinuous permafrost in vicinity of Teslin; permafrost in banks of Wolf River.	Scattered permafrost in organic patches. See Notes.	Scattered permafrost; may exist in very local patches in organic deposits. See Notes.	Scattered permafrost; may occur in very local patches in organic deposits. See Notes.	Scattered permafrost islands occur along this section of the highway. See Notes.
	BEDROCK LITHOLOGY	Big salmon complex in east consisting of gneiss, quartzite, greenstone, limestone Mississippian age. Granite granodiorite in west, Cretaceous age. (26)	Sylvester group - greenstone schist greywacke, quartzite, schists, Mississippian age. (26)	Gneiss, schist, limestone, dolomite, quartzite and greenstone. (26)	Carboniferous age argillite, slate, phyllite, chert, quartzite, arkose, conglomerate and limestone in east. Gneiss, schist, limestone, dolomite, quartzite in west. (26)	Quartzite, arkose, conglomerate Carboniferous age. Some Jurassic age granite, granodiorite, schists and gneiss in north. (26)
	HYDROLOGY	Teslin River drainage basin, Hays Creek, Strawberry Creek, Teslin Lake, Nisutlin Bay.	Morley River meandering, Hazel Creek, Cassiar Mountain streams with steep gradients and possibility of flash floods in summer.	Smart River meandering, Swift River meandering.	Logjam Creek, Screw Creek.	Swift River south crosses route in three places: Partridge Creek, Seagull Creek, Carlick Creek.
	PROCESSES AND STABILTY	Frost action in organic terrain; minor gully erosion at creek crossings; near-surface bedrock just east of Teslin.	Gully erosion, possible instability at Morley River crossing; frost action and low bearing capacity in organic terrain.	Lateral erosion in cut banks of Swift River.	Soil creep along extensive colluvial slopes.	Flood and erosion along Swift River.
ENVIRONMENT	ENGINEERING IMPLICATIONS AND CONSTRUCTION MATERIALS	Icing conditions in horsetail drainage zone around Hays Creek; aggregate not common. Special design at Nisutlin Bay crossing.	Morley River crossing; aggregate uncommon.	Possible erosion by Swift River; Smart River crossing. Aggregate common.	High possibility of extensive bedrock excavation; possibly difficult access. Aggregate abundant.	Flood and erosion hazard along Swift River; bedrock excavation in the eastern most section; abrupt scarps. Aggregate abundant.
	VEGETATION	White spruce and lodgepole pine and balsam poplar at lower levels on alluvial floodplains; in permafrost areas black spruce with scrub birch, willow, etc. Steep terrain with limited floodplains with white spruce and balsam poplars. Limited tree growth on north and east slopes. Mixed stands of white spruce, aspen and birch on west and south slopes.			White spruce and lodgepole pine and balsam poplar at lower levels on alluvial floodplains; in permafrost areas black spruce with scrub birch, willow, etc. Steep terrain with limited floodplains with white spruce and balsam poplars. Tree growth on north and east slopes. Mixed stands of white spruce, aspen and birch on west and south slopes.	
	FISHERIES	Lake trout and other species move into Nisutlin Bay to spawn chinook, salmon migrate through Morley Bay to Morley River to spawn in late summer early fall.	Morley River upstream migration of chinook salmon, last 2 weeks of August. (46)	Smart River upstream migration of chinook salmon into Smart Lake.	Swift river, upstream migration of chinook salmon with spawning near outlets of Swan and Swift lakes also sustains white fish and grayling populations.	
ENVIRONMENT	MAMMALS AND BIRDS	Nisutlin and Morley Bays adjacent to route staging area for migratory wild fowl - swans, duck, geese. Proposed TRP reserve No. 18 (Wolf lake) includes delta of Nisutlin River.	Excellent moose summer habitat and range in area of confluence of Smart and Swift Rivers.			Between MP 425-440 good caribou habitat. Caribou have been observed adjacent to the route. High concentrations of moose, upstream of Smart River along the Swift River valley.
	RESEARCH PRIORITIES	Drainage and permafrost conditions around Hays Creek, silt into Teslin Lake and Morley Bay. Migration routes and spawning areas of chinook salmon in rivers crossing the route, Ecology of salmon fry in relation to pipeline route.	Timing of chinook migration in Morley River system.	Salmon migration routes. Timing of movement of moose adjacent to pipeline.	Possible re-alignment to miss bedrock and colluvium. Distribution of moose.	Assessment of impact on Swift River alluvial plain; possible re-alignment to miss steep bedrock. Salmon migration and spawning areas in Swift River.
	NOTES	*Sampled, no permafrost, MP 785.1 (50) *Permafrost at MP 788.5, 1'6" depth and 3" thick. (50) *Permafrost at MP 791.2 (21) *Permafrost at MP 793 (20) *Permafrost at MP 794.8, 1'6" depth, 2'8" thick. (50) *Permafrost at MP 796 (20) *Permafrost at MP 802.5, 2'3" depth and 3'3" thick. (50) *Permafrost at MP 803.3, 2'4" depth, and 1" thick. (50) *Permafrost at MP 807.3, 2'4" depth, and 9" thick. (50) *Permafrost at MP 800.8 (20)	*Permafrost at MP 766.2 (21) *Permafrost at MP 768.3 to 770.3 (21) *Sampled, no permafrost at MP 771.6 (50) *Sampled, no permafrost at MP 774 (50) *Sampled, no permafrost at MP 775 (50) *Sampled, no permafrost at MP 776 (50)	*Permafrost at MP 754.9 (21) *Sampled for permafrost at MP 758.1; no permafrost found (50) *Sampled for permafrost at MP 762.4, no permafrost found (50)	*Permafrost at MP 748.2 (21) *Permafrost at MP 750.9 (21)	*Permafrost at MP 723.5 (21) *Sampled for permafrost at MP 731; none found. (50) *Permafrost at MP 733.2 (21)