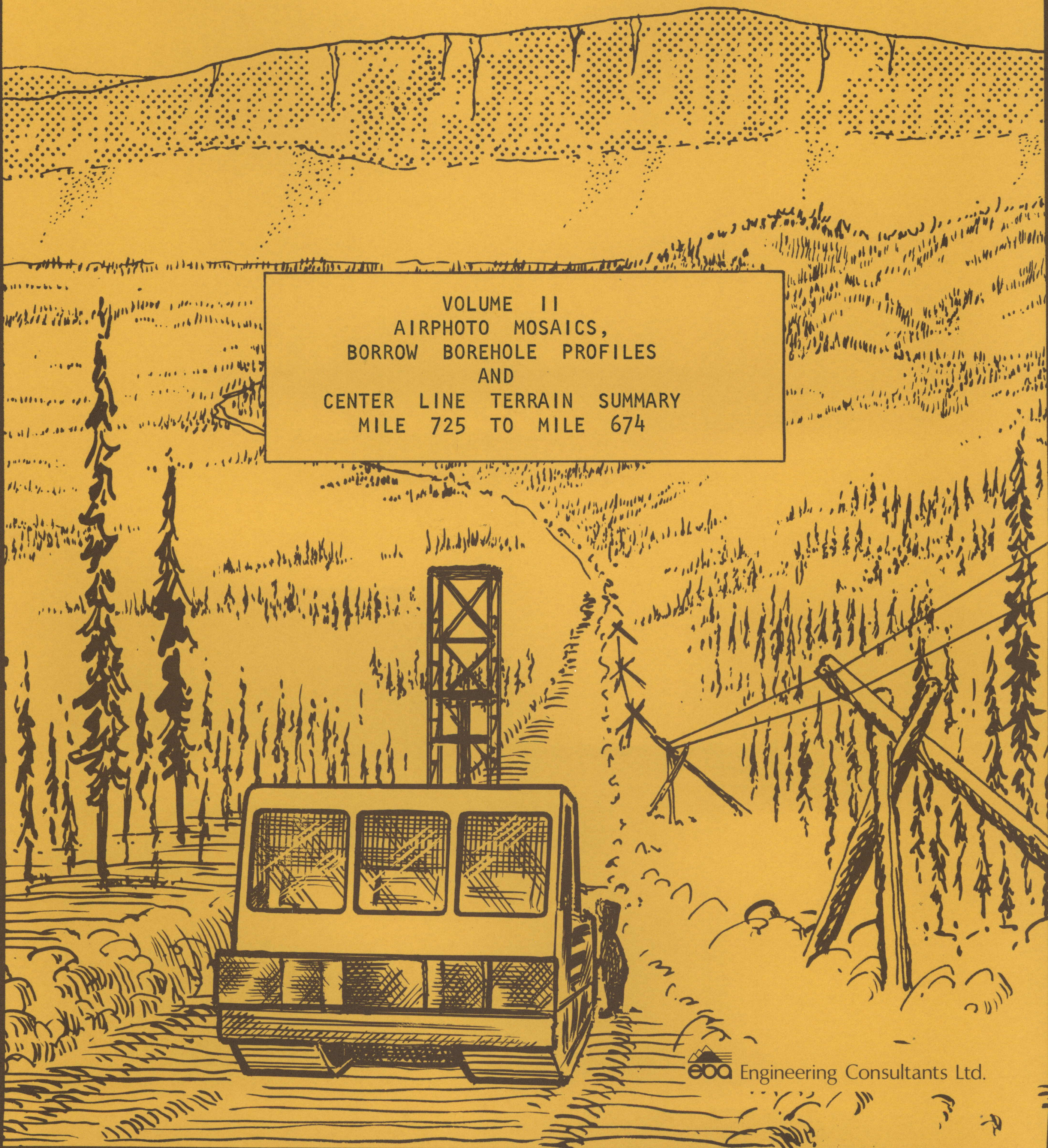
MACKENZIE HIGHWAY

GEOTECHNICAL EVALUATION



VOLUME II
AIRPHOTO MOSAICS,
BORROW BOREHOLE PROFILES
AND
CENTER LINE TERRAIN SUMMARY
MILE 725 TO MILE 674

eba Engineering Consultants Ltd.

ISSUE #3

VOLUME II

AIRPHOTO MOSAICS,

BORROW BOREHOLE PROFILES

AND

CENTER LINE TERRAIN SUMMARY

MILE 725 TO MILE 674

MOSAIC NO. 73

MILE 724 TO MILE 721

Center-Line Terrain Evaluation - Summary Sheet

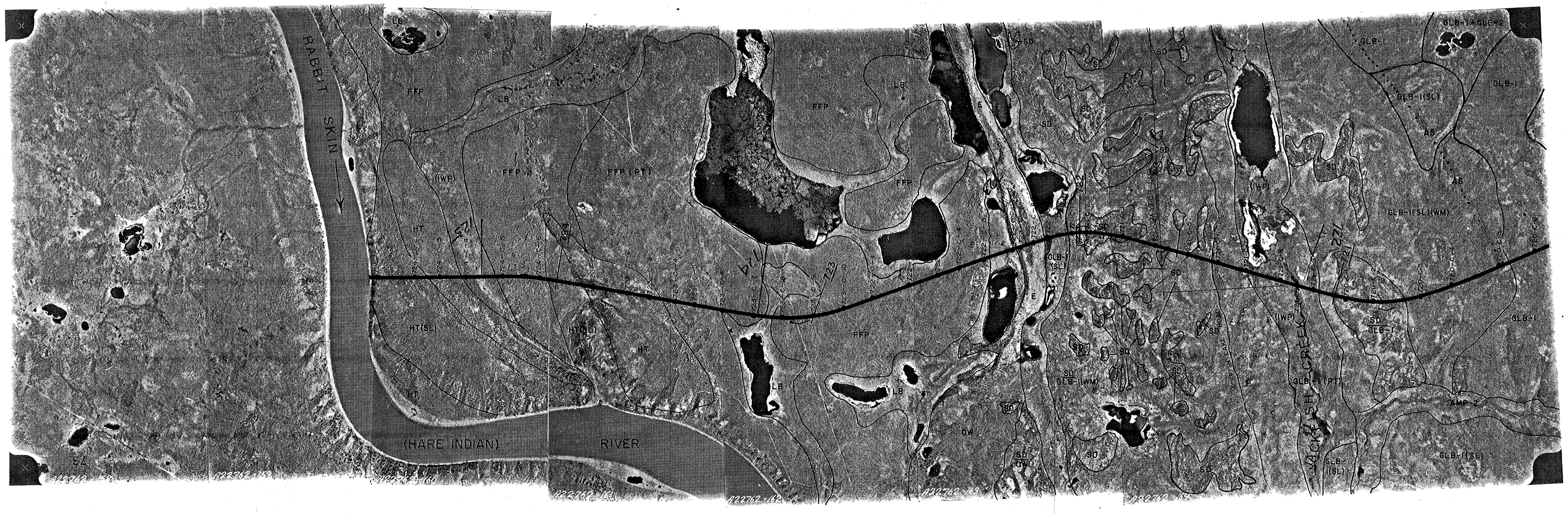
TERRAIN DESCRIPTION	TOPOGRAPHY	VEGETATION	SURFACE DRAINAGE	SURFICIAL SOIL	SUBSTRATA	GROUND ICE CONDITION		
						0 - 5'	5 - 10'	>10'
RABBIT SKIN RIVER Mile 724-7								
HT(SL) Slopewash Modified River Terrace	Generally Flat to Gently Sloping to River	Dwarf Spruce to 8' High Some Birch Willows & Tamarack	Good	3-6' of Fluvial Clay & Silt	Sand and Gravel to 39+' Depth	NB	NB to NF	NB to V 5%
HT River Terrace	Flat to Gentle Slopes	Spruce Birch and Willow	Good	Fluvial Clay & Silt to 6'	Gravel from 6' to 18+'	NB to NB	NF	NB
LB(IWP) Former Lake Basin	Flat	Thick Spruce 10-15' High	Fair to Good	0.5' of Organic Topsoil	Silt to 11' over Clay (Till)	V 2%	V 2%	NB Trace
FFP Fossil Flood Plain	Flat	Thick Spruce and Tamarack	Fair to Poor	0.5' of Organic Topsoil	6-8' of Silt & Clay over Clay Till	u/F to NB	V to NB & U/F	U/F to NB to NF
HT(SL) No Borehole Data	See similar unit .7 miles North.							
HT River Terrace	Gentle Rise to Flat Area	Dense Spruce 8-15' High	Fair	2-3' of Silt or Clay	Sand to a Depth of 18+'	V to V 5-20'	V 5-20%	V 5-20%
FFD(PT) Fossil Flood Plain With Peat Covered Areas	Knoll and Muskeg	Thick Spruce 10-20' on Knolls 4-8' in Muskeg	Fair to Poor	0.5 - 6' of Peat or Organic Topsoil	Generally Silt	In Low Areas V 30-55% In High Areas V 2-5%	In Low Areas V 30-55% In High Areas V 2-5%	V 10-30%
LB - No Borehole Data - see similar unit south of next unit								
FFP Fossil Flood Plain	Lowland With a Few Low Hills	Sparse to thick Spruce Greater Than 10' High Where Drainage is Good	Good to Fair	Locally up to 3' of Peat Generally Absent	Silt and Some Clay	V 10-30% to 60%	V 10-15%	V 10-15%
LB Former Lake Basin	Flat	Very Sparse Spruce 8-20'	Poor	6' of Peat	Sand	V -V 10-15%	V 10-15%	V 10-15%
E Ft. Good Hope Esker	High Ridge	20-30 Spruce 12' Aspen	Excellent	0-5' of Silt	Sand & Gravel	N/F	N/F	N/F
GLB-1(SL) Glacial Lake Basin	Lowland	Dwarf Spruce	Fair	0-5' of Organic Topsoil	Clay	U/F	U/F	NB
SD/GLB-1(WM) - Continued south of next unit								
SD Sand Dunes (Stabilized)	Low Hills	Birch & Spruce	Good	0-5-1' of Organic Topsoil	Fine Sand to a depth of 15-28'+	U/F	U/F	U/F to NB
SD/GLB-1(WM) Sand Dunes on Glacial Lake Basin	Low Hills on Gently Sloping Plain	Spruce 8-15'	Good		Locally Fine Silty Sand over Lacustrine Silt and Clay Generally Sand to 18+'	NB to V 10%	NB to V 10%	V 5-10%
GLB-1(PT) Glacial Lake Basin With Peat Cover	Low Valley With Creek Bed	Very Sparse Tamarack	Fair	3' of Peat & Organic Soil	Silt With Up to 4' of Ice	V 10-15% to 100%	V -V 10-25%	V -V 20-30%
GLB-1(SL)(WM) - Continued South of next unit								
SD/GLB-1 Sand Dune Covered Glacial Lake Basin	Low Hills on Gently Sloping Area	Spruce to 20' High	Good		Sand and Silt Over Lacustrine Clay	NB to NB 3-5%	NB to NB 3-5%	NB to NB 3-5%
GLB-1(SL)(WM) Wave and Slope wash modified Glacial Lake Basin	Gently Sloping to North	Spruce 8-15' Some Tamarack	Good	0-2.5' of Organic Topsoil	Lacustrine Silt and Sand	U/F to V -5%	NB to V -5%	NB to V -5%
720-C-5								

DRAWING No.	SHEET No.	TOTAL SHEETS
	73	

PLAN	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
ALIGNMENT						
TOPOG. NOTES						
DRAINAGE						
BORROW AREAS						
STRUCTURES NOTED						

MOSAIC		BY	DATE
FLIGHT No.	FLOWN		
PHOTO No.	INTERPRETATION		
ORIGINAL SCALE	LINE LOCATED IN FIELD		

PROFILE	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
℄ PROFILE						
SOILS						
DESIGN GRADELINE						
DRAINAGE						
STRUCTURES NOTED						



TERRAIN LEGEND

Symbol	Terrain Type	Physiographic Features	Materials Description
AFD	Alluvial Fan Deposit	Cone shaped, gently sloping stream outlet	Poorly sorted silt, sand gravel, some cobbles and boulders
AFP	Active Flood Plain	Exposed bars in stream or river channel	Sand and gravel in high energy streams to silt and sand in low energy streams
AMP	Alluvial Meander Plain (Mackenzie River Meander Plain)	Flat plain often with sand dunes on it	Sands and silty sands stratified or channel deposits
AMP-2	Alluvial Meander Plain (excluding the Mackenzie River Plain)	Flood plains filling bottom of the stream or river valley	Fine silt, sand or gravel as channel deposits
BR	Bedrock	Outcrop to continuous ridge	Exposed rock to rock with generally less than 5 feet of cover
DL	Deltaic Sand Plain	At the mouth of a river or creek	Silt topstratum over stratified silty sand and silt with some clay and pebbles
E	Esker	Narrow sharp ridge	Sand and/or gravel with some silt inclusions
FFP	Fossil Flood Plain	Flat plain may be dissected to rolling topography	Silty topstratum over sand and/or gravel of a flood plain of an inactive stream
GLB-1	Glacial Lake Basin (Better drained type)	Lowland occasionally swampy areas	Ice-rich to to medium plastic silty clay, occasionally with a trace of sand
GLB-2	Glacial Lake Basin (thermokarst type)	Lowlands usually swampy with thaw lakes	Usually peat covered glacio-lacustrine silty clay
GM	Ground Moraine (undifferentiated)	Flat to broad gentle slopes	Silt till to clay till usually some sand and gravel
HM	Hummocky Moraine	Large hummocks and short ridges with kettles	Mostly till with some sand and/or silt. Peat overlies silty clays in kettle depression
HT	High Terraces	Tabular bodies along the sides of and above present or abandoned river channels	Silt covered stratified sand and/or gravel of fluvial or outwash origin
K	Kames	Conical hill to short ridge	Complexly stratified sand and/or gravel with minor till or boulders
KT	Kame Terrace	Poorly expressed terraces	Dirty poorly sorted sand and/or gravel to till
LB	Lacustrine Basin	Postglacial ponded deposits in larger lowlying areas	Organic and inorganic clay, silt and fine sand
OW	Outwash Plains or Deltas	Tabular bodies	Sand and/or gravel
RKM	Ridge-and-Knoll Moraine	Drumlinized till plain. Rolling large linear features	Molded basal till low plastic silty-clay till
SD	Sand Dunes	Elongate Ridges to Barchans	Fine to medium sand
TS	Talus Slopes	Steep Slopes	Mainly coarse gravel cobbles and boulders

Surficial Features

AS	Abandoned Strandlines
DR	Drumlinoid forms including flutings and glacial grooves with linear ridges
IWP	Ice Wedge Polygons, usually in ice-rich silt
RG	Rock and Talus glaciers along the Norman Range. Mixed ice and silt to boulders.
RS	Rock Slide to rock avalanche scars on the Norman Range
SK	Sinkholes in soluble bedrock

Topstratum Phases (Associated with Terrain Types)

Df	Thin (0 - 10 feet) of drift over bedrock surface
PT	Mixed bog and fen peats in post glacial ponded depression
SL	Slopewash or solifluction features. Topstratum of ice-rich poorly sorted silty clay and silty sand to gravel
WM	Wave modified, mainly a thin sandy to gravelly washed layer over till

Complexes are shown as combinations of two terrain types with or without phases that pertain to the parent type.

Terrain Symbols are modified from Canadian Gas Arctic Study Limited Terrain Study for this area.

Legend For Mackenzie Highway Mosaic

	Mackenzie Highway
	Borrow Areas
- - - - -	Access Road to borrow area on pre-existing cutlines
	Cleared access to borrow areas
(18)	Borrow area number
689-C-4	Borehole number
721	Mileage
RKM	Terrain Outlines

Borrow Profile Legend

G	Gravel	W	Well Graded		Broken Section
S	Sand	P	Poorly Graded		End of Hole
M	Silt	L	Low Plasticity	NS	Not to Scale
C	Clay	I	Intermediate Plasticity	U	Unfrozen
Ls	Limestone	H	High Plasticity	N/A	Not Available
Sh	Shale	PT	Peat	NB)	Standard Ice
Dol	Dolomite	(T)	Till	NF)	Description
Bl	Boulder	(CL)	Low Plasticity Clayey Shale	V)	Symbols
O	Organic Soil	(18)	Borrow Area Number		

REVISED 20/2/73

Center-Line Terrain Evaluation - Summary Sheet

MOSAIC NO. 72

MILE 720 TO MILE 716

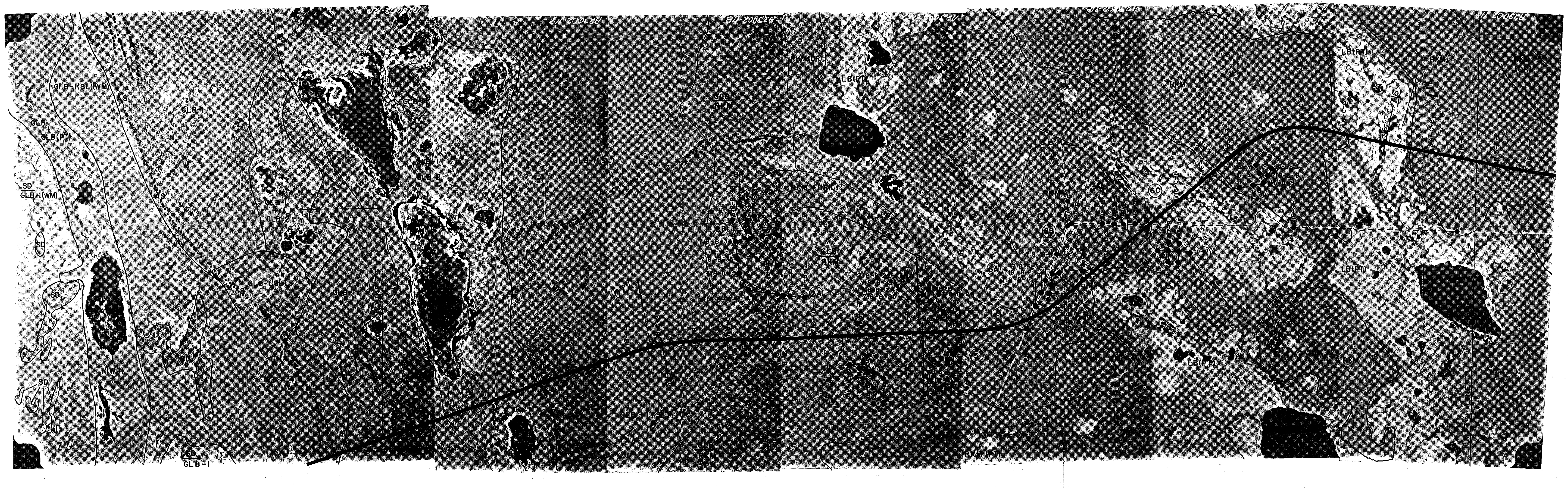
TERRAIN DESCRIPTION	TOPOGRAPHY	VEGETATION	SURFACE DRAINAGE	SURFICIAL SOIL	SUBSTRATA	GROUND ICE CONDITION		
						0 - 5'	5 - 10'	>10'
720-C-5								
GLB-1 Glacial Lake Basin	Top of Gentle Rise	Thick Spruce 15' High	Well Drained to North		Lacustrine Silt and Clay Some Sand	NB to U/F	U/F to NB to V -V 10%	U/F to NB
GLB-1+GLB-2 Glacial Lake Basin With Local Thermokarst Features	Flat	Sparse Spruce Some Willow & Tamarack	Poor to Fair	0-0.5' of Organic Topsoil	Lacustrine Clay	V 10-50%	V 10-50%	V 3-12%
GLB-1(SL) Slopewash and Solifluction Modified Glacial Lake Basin	Gently Sloping to North	Thin Spruce Less Than 15' High	Fair to Good	Lacustrine Silt & Clay to 11'	Clay Till Below 11'	V 5-15 to 4-6' Ice	V 5-15% to 55%	U/F to V (trace)
GLB/RKM Glacial Lake Basin Overlying Glacial Till	Flat to Gently Sloping to North	Thin Spruce to 20' High	Fair to Good	0.5 - 1' Organic Topsoil	0-11' of Lacustrine Clay Over Clay Till Generally About 8'	V 5-15%	NB to V 15%	U/F
RKM Ridge and Knoll Ground Moraine	Sloping Gently to North	Thin Spruce Spruce 10-15' High Some Tamarack	Fair	0.5' of Organic Topsoil	Clay Till	U/F	U/F	U/F
LB(PT) Relict Lake Basin With Peat Deposits	Flat	Thin Spruce and Tamarack	Fair to Poor	Organic Clay and Peat 3-6'	Clay Till	Generally unfrozen but for under thick organic U/F to V 30%	U/F to V 30%	U/F
RKM Ridge and Knoll Ground Moraine	Rising Low Hills Above Muskeg	Thin Spruce 6-12' High	Fair	0.5-1' Organic Topsoil	Clay Till	U/F	U/F	U/F
LB(PT) Relict Lake Basin With Peat Deposits	Flat Lowland	Thin Spruce	Very Poor	3' of Peat	Clay Till	V -15% to 3 (Peat)	U/F	U/F
RKM Ridge and Knoll Ground Moraine	Flat to Gentle Slope	Thin Spruce and Tamarack under 20' High	Fair to Good	1' of Organic Topsoil Over 0-2' of Lacustrine Clay	Clay Till to 30'+ Depth	U/F to V 25% Under Lacustrine Clay	U/F to NB	U/F to V Trace
715-C-3								

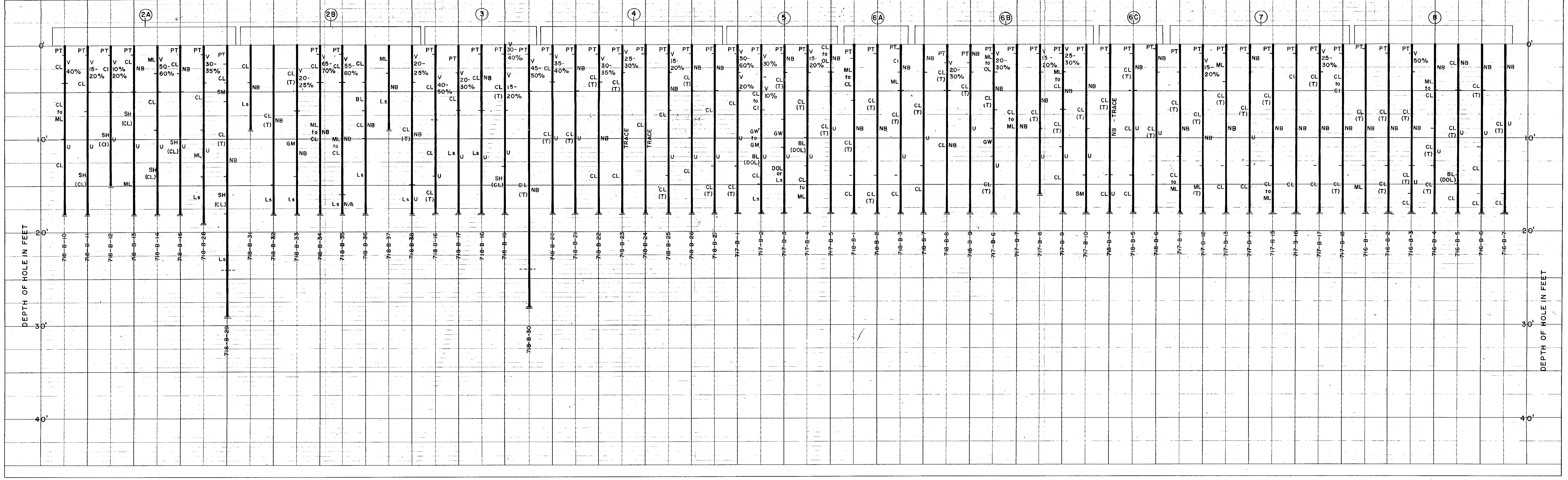
DRAWING No.	SHEET No.	TOTAL SHEETS
	12	

PLAN	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
ALIGNMENT						
TOPOG. NOTES						
DRAINAGE						
BORROW AREAS						
STRUCTURES NOTED						

MOSAIC		BY	DATE
FLIGHT No.	FLOWN		
PHOTO No.	INTERPRETATION		
ORIGINAL SCALE	LINE LOCATED IN FIELD		

PROFILE	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
℄ PROFILE						
SOILS						
DESIGN GRADELINE						
DRAINAGE						
STRUCTURES NOTED						





REVISED 20/2/73

TERRAIN LEGEND

Symbol	Terrain Type	Physiographic Features	Materials Description
AFD	Alluvial Fan Deposit	Cone shaped, gently sloping stream outlet	Poorly sorted silt, sand gravel, some cobbles and boulders
AFP	Active Flood Plain	Exposed bars in stream or river channel	Sand and gravel in high energy streams to silt and sand in low energy streams
AMP	Alluvial Meander Plain (Mackenzie River Meander Plain)	Flat plain often with sand dunes on it	Sands and silty sands stratified or channel deposits
AMP-2	Alluvial Meander Plain (excluding the Mackenzie River Plain)	Flood plains filling bottom of the stream or river valley	Fine silt, sand or gravel as channel deposits
BR	Bedrock	Outcrop to continuous ridge	Exposed rock to rock with generally less than 5 feet of cover
DL	Deltaic Sand Plain	At the mouth of a river or creek	Silt topstratum over stratified silty sand and silt with some clay and pebbles
E	Esker	Narrow sharp ridge	Sand and/or gravel with some silt inclusions
FFP	Fossil Flood Plain	Flat plain may be dissected to rolling topography	Silty topstratum over sand and/or gravel of a flood plain of an inactive stream
GLB-1	Glacial Lake Basin (Better drained type)	Lowland occasionally swampy areas	Ice-rich to to medium plastic silty clay, occasionally with a trace of sand
GLB-2	Glacial Lake Basin (thermokarst type)	Lowlands usually swampy with thaw lakes	Usually peat covered glacio-lacustrine silty clay
GM	Ground Moraine (undifferentiated)	Flat to broad gentle slopes	Silt till to clay till usually some sand and gravel
HM	Hummocky Moraine	Large hummocks and short ridges with kettles	Mostly till with some sand and/or silt. Peat overlies silty clays in kettle depression
HT	High Terraces	Tabular bodies along the sides of and above present or abandoned river channels	Silt covered stratified sand and/or gravel of fluvial or outwash origin
K	Kames	Conical hill to short ridge	Complexly stratified sand and/or gravel with minor till or boulders
KT	Kame Terrace	Poorly expressed terraces	Dirty poorly sorted sand and/or gravel to till
LB	Lacustrine Basin	Postglacial ponded deposits in larger lowlying areas	Organic and inorganic clay, silt and fine sand
OW	Outwash Plains or Deltas	Tabular bodies	Sand and/or gravel
RKM	Ridge-and-Knoll Moraine	Drumlinized till plain. Rolling large linear features	Molded basal till low plastic silty-clay till
SD	Sand Dunes	Elongate Ridges to Barchans	Fine to medium sand
TS	Talus Slopes	Steep Slopes	Mainly coarse gravel cobbles and boulders

Surficial Features

• • • AS	Abandoned Strandlines
DR	Drumlinoid forms including flutings and glacial grooves with linear ridges
IWP	Ice Wedge Polygons, usually in ice-rich silt
RG	Rock and Talus glaciers along the Norman Range. Mixed ice and silt to boulders.
RS	Rock Slide to rock avalanche scars on the Norman Range
SK	Sinkholes in soluble bedrock

Topstratum Phases (Associated with Terrain Types)

Df	Thin (0 - 10 feet) of drift over bedrock surface
PT	Mixed bog and fen peats in post glacial ponded depression
SL	Slopewash or solifluction features. Topstratum of ice-rich poorly sorted silty clay and silty sand to gravel
WM	Wave modified, mainly a thin sandy to gravelly washed layer over till

Complexes are shown as combinations of two terrain types with or without phases that pertain to the parent type.

Terrain Symbols are modified from Canadian Gas Arctic Study Limited Terrain Study for this area.

Legend For Mackenzie Highway Mosaic

- Mackenzie Highway
- Borrow Areas
- Access Road to borrow area on pre-existing cutlines
- Cleared access to borrow areas
- (18) Borrow area number
- 689-C-4 Borehole number
- 721 Mileage
- RKM Terrain Outlines

Borrow Profile Legend

G	Gravel	W	Well Graded		Broken Section
S	Sand	P	Poorly Graded		End of Hole
M	Silt	L	Low Plasticity	NS	Not to Scale
C	Clay	I	Intermediate Plasticity	U	Unfrozen
Ls	Limestone	H	High Plasticity	N/A	Not Available
Sh	Shale	PT	Peat	NB)	Standard Ice
Dol	Dolomite	(T)	Till	NF)	Description
Bl	Boulder	(CL)	Low Plasticity Clayey Shale	V)	Symbols
O	Organic Soil	(18)	Borrow Area Number		

MOSAIC NO. 71

Center-Line Terrain Evaluation - Summary Sheet

MILF 715 TO MILE 709

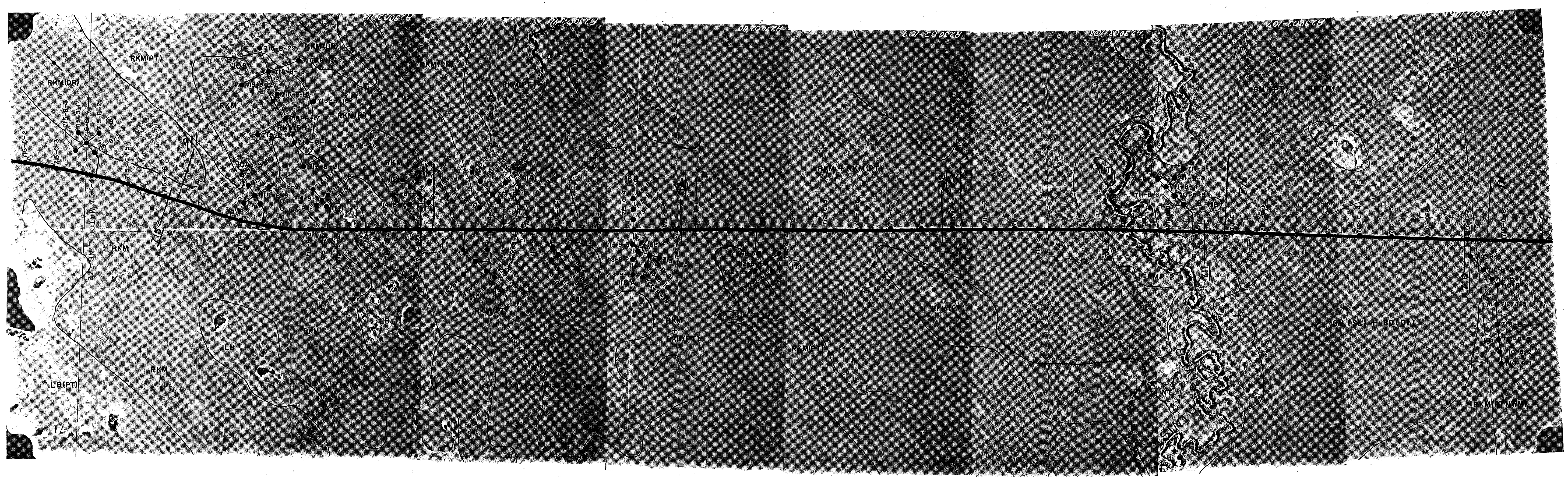
TERRAIN DESCRIPTION	TOPOGRAPHY	VEGETATION	SURFACE DRAINAGE	SURFICIAL SOIL	SUBSTRATA	GROUND ICE CONDITION 0 - 5'	5 - 10'	>10'
715-C-3								
RKM Ridge and Knoll Ground Moraine	Local Water Divide at Mile 715.3 Wide Nearly Flat Plateau	Thin Spruce to 15-20 High. Large Areas of Fire-kill	Fair to to Poor	1' of Organic Topsoil	Clay Till to 30+' Depth	NB to to V 25% Season-al Frost (S/F)	U/F	U/F
LB Lake Basin	Valley Type Depression	Fire-Killed Spruce	Poor	1' of Organic Topsoil	Very Wet Lacustrine Clay to 12' Over Clay Till	U/F	U/F	U/F
RKM Ridge & Knoll Ground Moraine	Flat	Fire-Killed Spruce and Tamarack	Fair to Poor	1' of Organic Topsoil	Clay Till	U/F	U/F	U/F
RKM(PT) Ridge and Knoll Ground Moraine With Peat Cover	Large Low Area	Grass Willow and a Few Tamarack Fire-Killed Area	Fair to Poor	2-2.5' of Peat Over Silty Clay	Clay Till From 4-11' Depth Over Over Shale Bedrock	U/F	U/F	U/F
RKM Ridge and Knoll Ground Moraine	Sloping Gently to the South and Tsintu River	Dominantly Fire-Killed Spruce Some Willow and Tamarack	Fair to Poor	1' of Organic Topsoil	Clay Till to Shale Bedrock at 10-12'	U/F	U/F	U/F
AMP-2 Tsintu River -	see separate report for detailed report	Willow	Good	6-7' of Peat	Clay Till Over Shale at 6-12'	U/F	U/F	U/F
GM(PT) + BR(Df) Ground Moraine With Shallow Bedrock With Organic Cover	Sloping Gently Towards the Tsintu River	Thin Spruce 15-20' High Some Tamarack	Good to Poor	1-3' of Organic Topsoil	Organic Topsoil and Organic Rich Clay to 4-6' Over Shale Bedrock	U/F	U/F	U/F
GM(SL)+BR(Df Solifluction Modified Ground Moraine Over Shallow Bedrock	Gently Sloping to North	Thin Spruce and Tamarack	Good	1' of Organic Topsoil	4-6' of Clay Till Over Shale Bedrock	U/F	U/F	U/F
709-C-1								

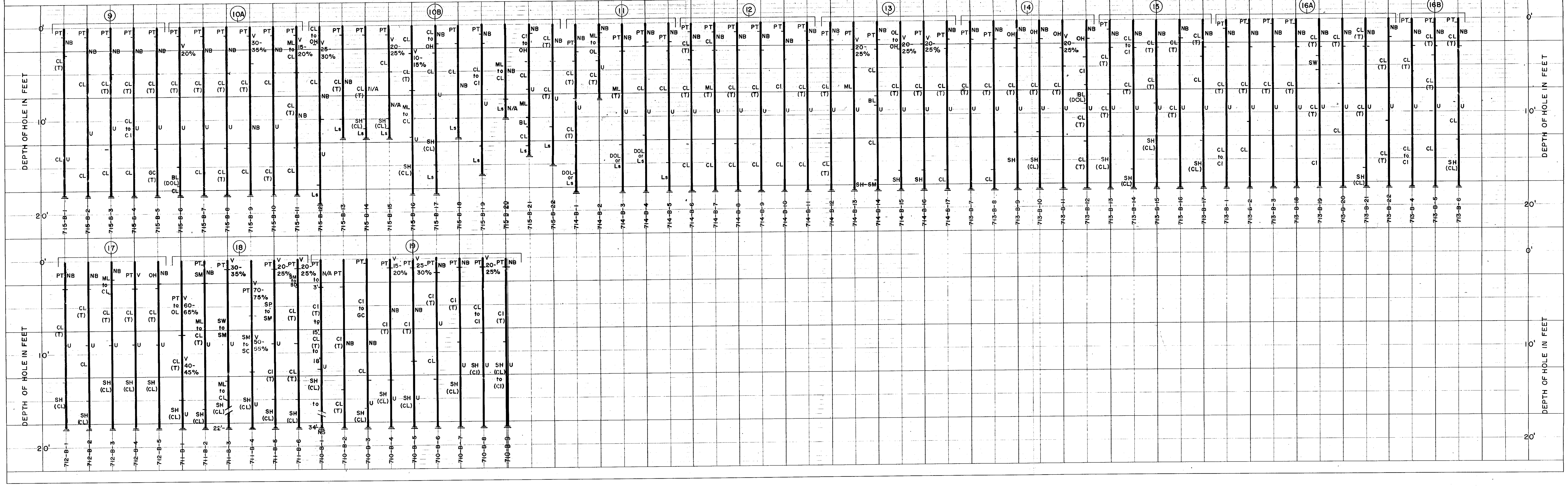
DRAWING No.	SHEET No.	TOTAL SHEETS
	71	

PLAN	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
ALIGNMENT						
TOPOGR. NOTES						
DRAINAGE						
BORROW AREAS						
STRUCTURES NOTED						

MOSAIC		BY	DATE
FLIGHT No.	FLOWN		
PHOTO No.	INTERPRETATION		
ORIGINAL SCALE	LINE LOCATED IN FIELD		

PROFILE	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
℄ PROFILE						
SOILS						
DESIGN GRADELINE						
DRAINAGE						
STRUCTURES NOTED						





REVISED 20/2/73

TERRAIN LEGEND

Symbol	Terrain Type	Physiographic Features	Materials Description
AFD	Alluvial Fan Deposit	Cone shaped, gently sloping stream outlet	Poorly sorted silt, sand gravel, some cobbles and boulders
AFP	Active Flood Plain	Exposed bars in stream or river channel	Sand and gravel in high energy streams to silt and sand in low energy streams
AMP	Alluvial Meander Plain (Mackenzie River Meander Plain)	Flat plain often with sand dunes on it	Sands and silty sands stratified or channel deposits
AMP-2	Alluvial Meander Plain (excluding the Mackenzie River Plain)	Flood plains filling bottom of the stream or river valley	Fine silt, sand or gravel as channel deposits
BR	Bedrock	Outcrop to continuous ridge	Exposed rock to rock with generally less than 5 feet of cover
DL	Deltaic Sand Plain	At the mouth of a river or creek	Silt topstratum over stratified silty sand and silt with some clay and pebbles
E	Esker	Narrow sharp ridge	Sand and/or gravel with some silt inclusions
FFP	Fossil Flood Plain	Flat plain may be dissected to rolling topography	Silty topstratum over sand and/or gravel of a flood plain of an inactive stream
GLB-1	Glacial Lake Basin (Better drained type)	Lowland occasionally swampy areas	Ice-rich to to medium plastic silty clay, occasionally with a trace of sand
GLB-2	Glacial Lake Basin (thermokarst type)	Lowlands usually swampy with thaw lakes	Usually peat covered glacio-lacustrine silty clay
GM	Ground Moraine (undifferentiated)	Flat to broad gentle slopes	Silt till to clay till usually some sand and gravel
HM	Hummocky Moraine	Large hummocks and short ridges with kettles	Mostly till with some sand and/or silt. Peat overlies silty clays in kettle depression
HT	High Terraces	Tabular bodies along the sides of and above present or abandoned river channels	Silt covered stratified sand and/or gravel of fluvial or outwash origin
K	Kames	Conical hill to short ridge	Complexly stratified sand and/or gravel with minor till or boulders
KT	Kame Terrace	Poorly expressed terraces	Dirty poorly sorted sand and/or gravel to till
LB	Lacustrine Basin	Postglacial ponded deposits in larger lowlying areas	Organic and inorganic clay, silt and fine sand
OW	Outwash Plains or Deltas	Tabular bodies	Sand and/or gravel
RKM	Ridge-and-Knoll Moraine	Drumlinized till plain. Rolling large linear features	Molded basal till low plastic silty-clay till
SD	Sand Dunes	Elongate Ridges to Barchans	Fine to medium sand
TS	Talus Slopes	Steep Slopes	Mainly coarse gravel cobbles and boulders

Surficial Features

• • • AS	Abandoned Strandlines
DR	Drumlinoid forms including flutings and glacial grooves with linear ridges
IWP	Ice Wedge Polygons, usually in ice-rich silt
RG	Rock and Talus glaciers along the Norman Range. Mixed ice and silt to boulders.
RS	Rock Slide to rock avalanche scars on the Norman Range
SK	Sinkholes in soluble bedrock

Topstratum Phases (Associated with Terrain Types)

Df	Thin (0 - 10 feet) of drift over bedrock surface
PT	Mixed bog and fen peats in post glacial ponded depression
SL	Slopewash or solifluction features. Topstratum of ice-rich poorly sorted silty clay and silty sand to gravel
WM	Wave modified, mainly a thin sandy to gravelly washed layer over till

Complexes are shown as combinations of two terrain types with or without phases that pertain to the parent type.

Terrain Symbols are modified from Canadian Gas Arctic Study Limited Terrain Study for this area.

Legend For Mackenzie Highway Mosaic

	Mackenzie Highway
	Borrow Areas
	Access Road to borrow area on pre-existing cutlines
	Cleared access to borrow areas
18	Borrow area number
689-C-4	Borehole number
721	Mileage
RKM	Terrain Outlines

Borrow Profile Legend

G	Gravel	W	Well Graded		Broken Section
S	Sand	P	Poorly Graded		End of Hole
M	Silt	L	Low Plasticity	NS	Not to Scale
C	Clay	I	Intermediate Plasticity	U	Unfrozen
Ls	Limestone	H	High Plasticity	N/A	Not Available
Sh	Shale	PT	Peat	NB)	Standard Ice
Dol	Dolomite	(T)	Till	NF)	Description
Bl	Boulder	(CL)	Low Plasticity Clayey Shale	V)	Symbols
O	Organic Soil	18	Borrow Area Number		

MOSAIC NO. 70

Center-Line Terrain Evaluation - Summary Sheet

MILE 710 TO MILE 704

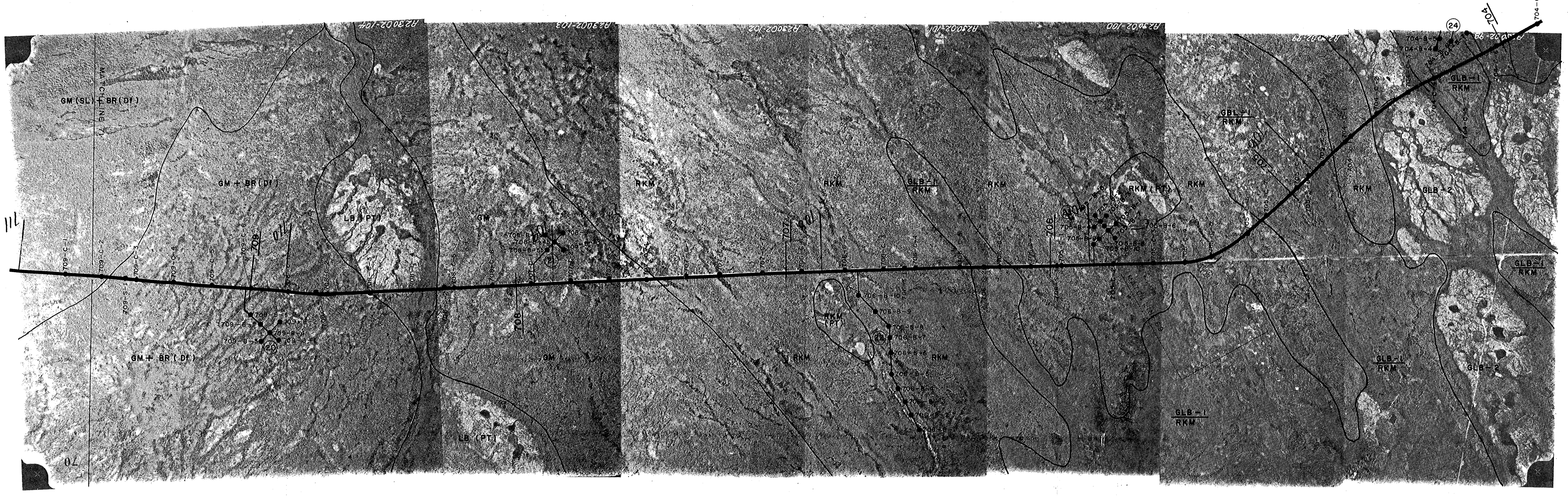
TERRAIN DESCRIPTION	TOPOGRAPHY	VEGETATION	SURFACE DRAINAGE	SURFICIAL SOIL	SUBSTRATA	GROUND ICE CONDITION 0 - 5'	5 - 10'	>10'
709-1-C								
GMTBRC(Df) Ground Moraine Over Shallow Bedrock	Gentle Slope to North	Thin Spruce and Tamarack under 15' High	Good to Fair	0.5' of of Organic Topsoil	Generally 8' of Organic Rich Clay and Clay Till Over Shale Bedrock	U/F	U/F	U/F
LB (PT) Relict Lake Basin With Peat	Shallow Depression	Thick Spruce Some Willows Muskeg Vegetation	Fair to Poor	3' of Peat and Organic Topsoil	Clay Till to 8' Depth Over Shale Bedrock	NB to U/F (SF)	U/F	U/F
GM Ground Moraine	Local Water Divide of Approx. Mile 707.7 Flat to Gentle Slopes	Thick Spruce to 15' High	Good to Fair	1' of Organic Topsoil	Clay Till With some Silt Till Below 10' Depth	U/F	U/F	U/F
Ridge and Knoll Ground Moraine	Gentle Slopes To Local Flat Areas	Thin Spruce and Tamarack to 15' High	Fair to Good	1' of Organic Topsoil	Clay Till Over Shallow Shale to South of Unit	U/F	U/F	U/F
GLB-1/RKM Glacial Lake Basin on Ridge and Knoll Moraine	Flat Lowland	Sparse Spruce and Tamarack 6-15' High	Poor to Fair	1' of Organic Topsoil	Lacustrine Clay over Clay Till or Shale Bedrock	U/F	U/F	U/F
RKM Ridge and Knoll Ground Moraine	Gentle Slopes To Flat	Spruce and Tamarack 15-20' High	Fair to Good	1-2' of Organic Topsoil	Clay Till Over Shale Bedrock at 10-14'	U/F	U/F	U/F
GLB-1/RKM Glacial Lake Basin on Ridge and Knoll Moraine	Lowlying Flat	Sparse Tamarack and Spruce	Fair	Generally 5' of Peat and Organic Clay	Clay Till	NB to V 5%	U/F	U/F
Ridge and Knoll Ground Moraine	Low Gently Sloped Hill	Thick Spruce 6-10' High	Good	1' of Organic Topsoil	Clay Till	U/F	U/F	U/F
GLB-2/RKM Glacial Lake Basin on Ridge and Knoll Moraine	Lowlying Very Gently Sloping	Thin Spruce and Tamarack	Fair to Good	1 - 4' of Organic Topsoil and Peat	From 7-13' Depth Lacustrine Silt or Clay Over Clay Till	V 20-35%	NB	NB
704-C-6								

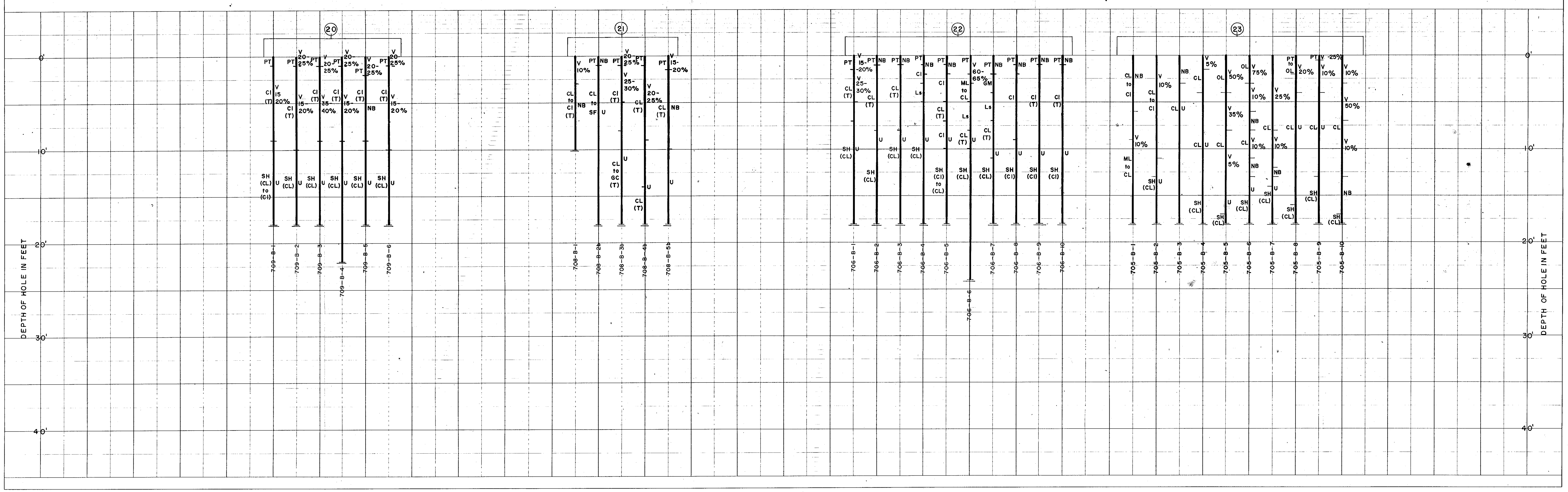
DRAWING No.	SHEET No.	TOTAL SHEETS
	70	

PLAN: ALIGNMENT, TOPOGR. NOTES, DRAINAGE, BORROW AREAS, STRUCTURES NOTED — SURVEYED / DATE / PLOTTED / DATE / CHECKED / DATE

MOSAIC: FLIGHT No., PHOTO No., ORIGINAL SCALE — FLOWN, INTERPRETATION, LINE LOCATED IN FIELD — BY / DATE

PROFILE: ℄ PROFILE, SOILS, DESIGN GRADELINE, DRAINAGE, STRUCTURES NOTED — SURVEYED / DATE / PLOTTED / DATE / CHECKED / DATE





REVISED 20/2/73

TERRAIN LEGEND

Symbol	Terrain Type	Physiographic Features	Materials Description
AFD	Alluvial Fan Deposit	Cone shaped, gently sloping stream outlet	Poorly sorted silt, sand gravel, some cobbles and boulders
AFP	Active Flood Plain	Exposed bars in stream or river channel	Sand and gravel in high energy streams to silt and sand in low energy streams
AMP	Alluvial Meander Plain (Mackenzie River Meander Plain)	Flat plain often with sand dunes on it	Sands and silty sands stratified or channel deposits
AMP-2	Alluvial Meander Plain (excluding the Mackenzie River Plain)	Flood plains filling bottom of the stream or river valley	Fine silt, sand or gravel as channel deposits
BR	Bedrock	Outcrop to continuous ridge	Exposed rock to rock with generally less than 5 feet of cover
DL	Deltaic Sand Plain	At the mouth of a river or creek	Silt topstratum over stratified silty sand and silt with some clay and pebbles
E	Esker	Narrow sharp ridge	Sand and/or gravel with some silt inclusions
FFP	Fossil Flood Plain	Flat plain may be dissected to rolling topography	Silty topstratum over sand and/or gravel of a flood plain of an inactive stream
GLB-1	Glacial Lake Basin (Better drained type)	Lowland occasionally swampy areas	Ice-rich to to medium plastic silty clay, occasionally with a trace of sand
GLB-2	Glacial Lake Basin (thermokarst type)	Lowlands usually swampy with thaw lakes	Usually peat covered glacio-lacustrine silty clay
GM	Ground Moraine (undifferentiated)	Flat to broad gentle slopes	Silt till to clay till usually some sand and gravel
HM	Hummocky Moraine	Large hummocks and short ridges with kettles	Mostly till with some sand and/or silt. Peat overlies silty clays in kettle depression
HT	High Terraces	Tabular bodies along the sides of and above present or abandoned river channels	Silt covered stratified sand and/or gravel of fluvial or outwash origin
K	Kames	Conical hill to short ridge	Complexly stratified sand and/or gravel with minor till or boulders
KT	Kame Terrace	Poorly expressed terraces	Dirty poorly sorted sand and/or gravel to till
LB	Lacustrine Basin	Postglacial ponded deposits in larger lowlying areas	Organic and inorganic clay, silt and fine sand
OW	Outwash Plains or Deltas	Tabular bodies	Sand and/or gravel
RKM	Ridge-and-Knoll Moraine	Drumlinized till plain. Rolling large linear features	Molded basal till low plastic silty-clay till
SD	Sand Dunes	Elongate Ridges to Barchans	Fine to medium sand
TS	Talus Slopes	Steep Slopes	Mainly coarse gravel cobbles and boulders

Surficial Features

AS	Abandoned Strandlines
DR	Drumlinoid forms including flutings and glacial grooves with linear ridges
IWP	Ice Wedge Polygons, usually in ice-rich silt
RG	Rock and Talus glaciers along the Norman Range. Mixed ice and silt to boulders.
RS	Rock Slide to rock avalanche scars on the Norman Range
SK	Sinkholes in soluble bedrock

Topstratum Phases (Associated with Terrain Types)

Df	Thin (0 - 10 feet) of drift over bedrock surface
PT	Mixed bog and fen peats in post glacial ponded depression
SL	Slopewash or solifluction features. Topstratum of ice-rich poorly sorted silty clay and silty sand to gravel
WM	Wave modified, mainly a thin sandy to gravelly washed layer over till

Complexes are shown as combinations of two terrain types with or without phases that pertain to the parent type.

Terrain Symbols are modified from Canadian Gas Arctic Study Limited Terrain Study for this area.

Legend For Mackenzie Highway Mosaic

- Mackenzie Highway
- Borrow Areas
- Access Road to borrow area on pre-existing cutlines
- Cleared access to borrow areas
- (18) Borrow area number
- 689-C-4 Borehole number
- 721 Mileage
- RKM Terrain Outlines

Borrow Profile Legend

G	Gravel	W	Well Graded		Broken Section
S	Sand	P	Poorly Graded		End of Hole
M	Silt	L	Low Plasticity	NS	Not to Scale
C	Clay	I	Intermediate Plasticity	U	Unfrozen
Ls	Limestone	H	High Plasticity	N/A	Not Available
Sh	Shale	PT	Peat	NB)	Standard Ice
Dol	Dolomite	(T)	Till	NF)	Description
Bl	Boulder	(CL)	Low Plasticity Clayey Shale	V)	Symbols
O	Organic Soil	(18)	Borrow Area Number		

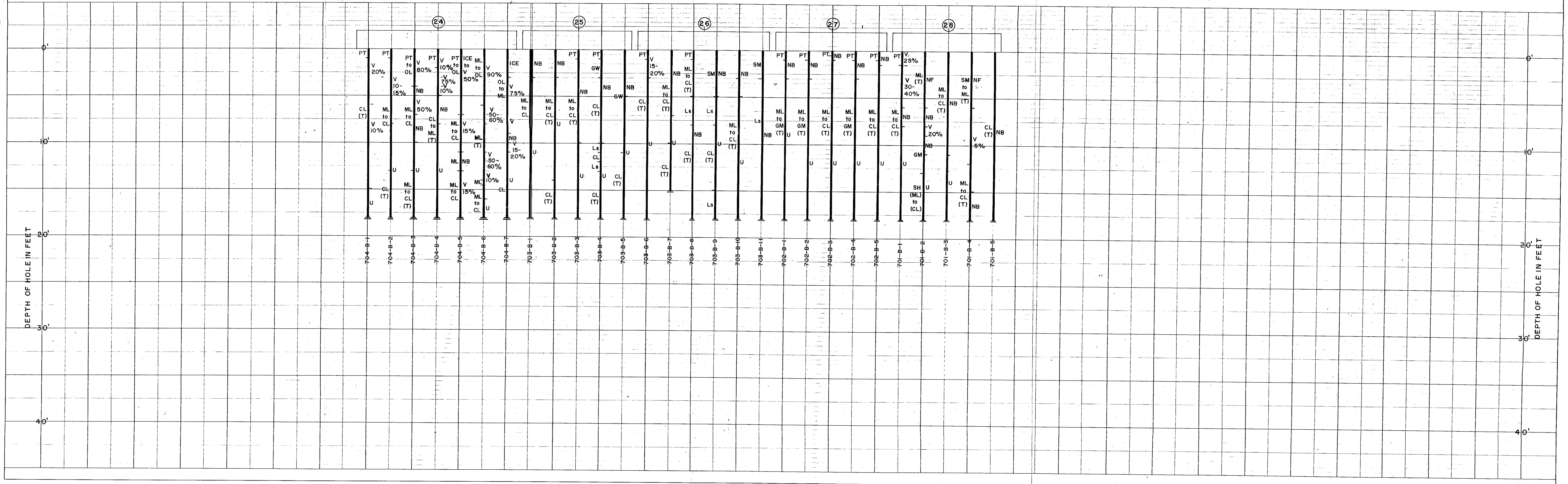
MOSAIC NO. 69

Center-Line Terrain Evaluation - Summary Sheet

MILE 703 TO MILE 699

TERRAIN DESCRIPTION	TOPOGRAPHY	VEGETATION	SURFACE DRAINAGE	SURFICIAL SOIL	SUBSTRATA	GROUND ICE CONDITION 0 - 5'	5 - 10'	>10'
704-C-6								
RKM Ridge and Knoll Ground Moraine	Lowlying Hill With Very Gentle Slopes	Thin Spruce and Tamarack to 15' High	Fair to Poor	1-1.5' of Organic Topsoil	Clay Till to Silt Till	NB to U/F (S/F)	U/F	U/F
GLB-1(PT) Glacial Lake Basin With Peaty Soils	Lowlying Very Gently Sloping Areas	Thin Black Spruce	Fair to Poor	Generally 3' of Peat and Organic Soil Locally up to 7' of Peat	Clay-Silt Till	NB to V 75% (S/F)	U/F	U/F
RKM Ridge and Knoll Ground Moraine	Gently Sloping Low Hill	Black Spruce and Poplar	Fair to Good	0-1' of Organic	Silt	NB to V 10-70% (S/F)	U/F	U/F
GLB-1(PT) Glacial Lake Basin With Peaty Soils	Lowland Bog	Willow Dwarf Spruce	Poor	3' of Peat to Organic Soil	Silt Till from 3-10' Over Clay Till	NB S/F	U/F	U/F
RKM+RKM(PT) Ridge and Knoll Moraine With Local Peat Deposits	Lowlying Area Flat to Gently Sloping	Black Spruce Some Fire-Killed Areas	Poor to Fair Better Near the Creek	0-1' Peat and Organic Topsoil Locally up to 4' of Peat	Generally Silt Till to Silt-Clay Till. Local Sand Tills Also Extending to 22+' at the Creek	NB to V 10% Locally up to 90% Ice (S/F)	U/F	U/F
AMP-2 SNAFU LAKE- CREEK No. 1 - See Separate Report for Detail								
RKM+RKM(PT) Ridge and Knoll Moraine With Local Peat Deposits	Gently Sloping to Creek	Black Spruce	Fair to Good		Silt Till and Clay Till to 18+'	NB to U/F	U/F	U/F
GLB-1(PT) Glacial Lake Basin With Peaty Soils	Flat to Sloping Gently to Lake	Black Spruce Willows and Some Tamarack	Poor	2-6' of Peat	Clay Till and Silt Till	V 10-20% to 60-90%	V 20-70%	V 20-30% to U/F
669-C-3								

DRAWING No.	SHEET No.	TOTAL SHEETS
	69	



PLAN	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
ALIGNMENT						
TOPOGR. NOTES						
DRAINAGE						
BORROW AREAS						
STRUCTURES NOTED						

MOSAIC	BY	DATE
FLIGHT No. / FLOWN		
PHOTO No. / INTERPRETATION		
ORIGINAL SCALE / LINE LOCATED IN FIELD		

PROFILE	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
℄ PROFILE						
SOILS						
DESIGN GRADELINE						
DRAINAGE						
STRUCTURES NOTED						

REVISED 20/2/73

TERRAIN LEGEND

Symbol	Terrain Type	Physiographic Features	Materials Description
AFD	Alluvial Fan Deposit	Cone shaped, gently sloping stream outlet	Poorly sorted silt, sand gravel, some cobbles and boulders
AFP	Active Flood Plain	Exposed bars in stream or river channel	Sand and gravel in high energy streams to silt and sand in low energy streams
AMP	Alluvial Meander Plain (Mackenzie River Meander Plain)	Flat plain often with sand dunes on it	Sands and silty sands stratified or channel deposits
AMP-2	Alluvial Meander Plain (excluding the Mackenzie River Plain)	Flood plains filling bottom of the stream or river valley	Fine silt, sand or gravel as channel deposits
BR	Bedrock	Outcrop to continuous ridge	Exposed rock to rock with generally less than 5 feet of cover
DL	Deltaic Sand Plain	At the mouth of a river or creek	Silt topstratum over stratified silty sand and silt with some clay and pebbles
E	Esker	Narrow sharp ridge	Sand and/or gravel with some silt inclusions
FFP	Fossil Flood Plain	Flat plain may be dissected to rolling topography	Silty topstratum over sand and/or gravel of a flood plain of an inactive stream
GLB-1	Glacial Lake Basin (Better drained type)	Lowland occasionally swampy areas	Ice-rich to to medium plastic silty clay, occasionally with a trace of sand
GLB-2	Glacial Lake Basin (thermokarst type)	Lowlands usually swampy with thaw lakes	Usually peat covered glacio-lacustrine silty clay
GM	Ground Moraine (undifferentiated)	Flat to broad gentle slopes	Silt till to clay till usually some sand and gravel
HM	Hummocky Moraine	Large hummocks and short ridges with kettles	Mostly till with some sand and/or silt. Peat overlies silty clays in kettle depression
HT	High Terraces	Tabular bodies along the sides of and above present or abandoned river channels	Silt covered stratified sand and/or gravel of fluvial or outwash origin
K	Kames	Conical hill to short ridge	Complexly stratified sand and/or gravel with minor till or boulders
KT	Kame Terrace	Poorly expressed terraces	Dirty poorly sorted sand and/or gravel to till
LB	Lacustrine Basin	Postglacial ponded deposits in larger lowlying areas	Organic and inorganic clay, silt and fine sand
OW	Outwash Plains or Deltas	Tabular bodies	Sand and/or gravel
RKM	Ridge-and-Knoll Moraine	Drumlinized till plain. Rolling large linear features	Molded basal till low plastic silty-clay till
SD	Sand Dunes	Elongate Ridges to Barchans	Fine to medium sand
TS	Talus Slopes	Steep Slopes	Mainly coarse gravel cobbles and boulders

Surficial Features

• • • AS	Abandoned Strandlines
DR	Drumlinoid forms including flutings and glacial grooves with linear ridges
IWP	Ice Wedge Polygons, usually in ice-rich silt
RG	Rock and Talus glaciers along the Norman Range. Mixed ice and silt to boulders.
RS	Rock Slide to rock avalanche scars on the Norman Range
SK	Sinkholes in soluble bedrock

Topstratum Phases (Associated with Terrain Types)

Df	Thin (0 - 10 feet) of drift over bedrock surface
PT	Mixed bog and fen peats in post glacial ponded depression
SL	Slopewash or solifluction features. Topstratum of ice-rich poorly sorted silty clay and silty sand to gravel
WM	Wave modified, mainly a thin sandy to gravelly washed layer over till

Complexes are shown as combinations of two terrain types with or without phases that pertain to the parent type.

Terrain Symbols are modified from Canadian Gas Arctic Study Limited Terrain Study for this area.

Legend For Mackenzie Highway Mosaic

	Mackenzie Highway
	Borrow Areas
- - - - -	Access Road to borrow area on pre-existing cutlines
	Cleared access to borrow areas
(18)	Borrow area number
689-C-4	Borehole number
721	Mileage
RKM	Terrain Outlines

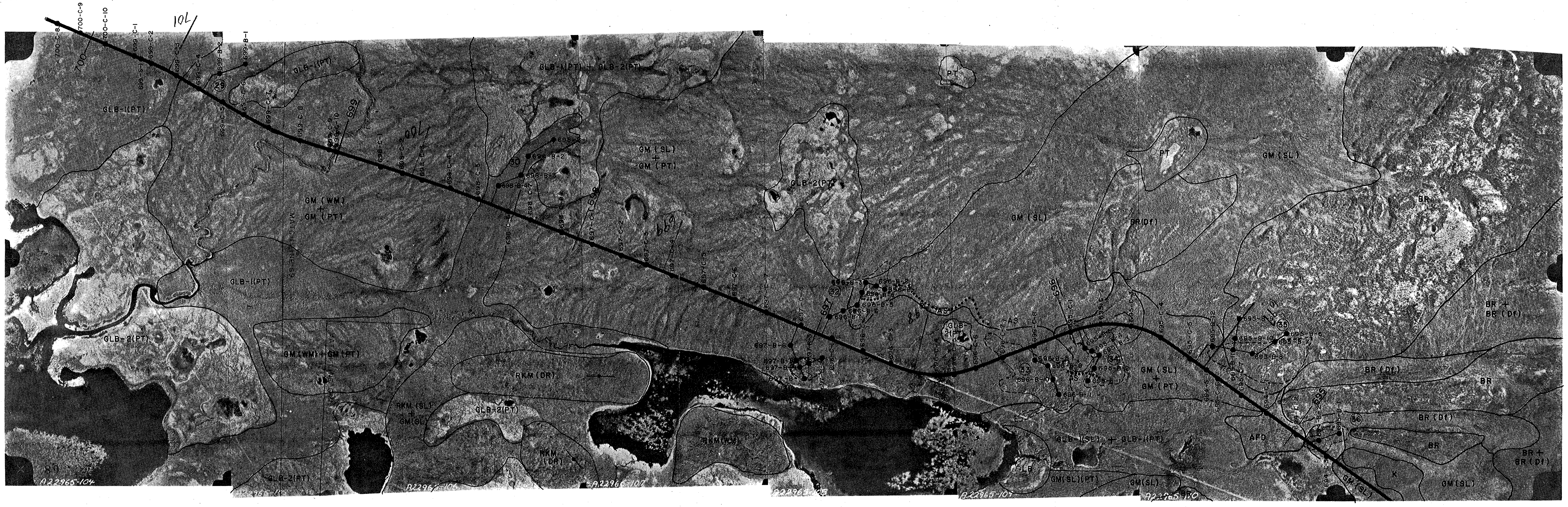
Borrow Profile Legend

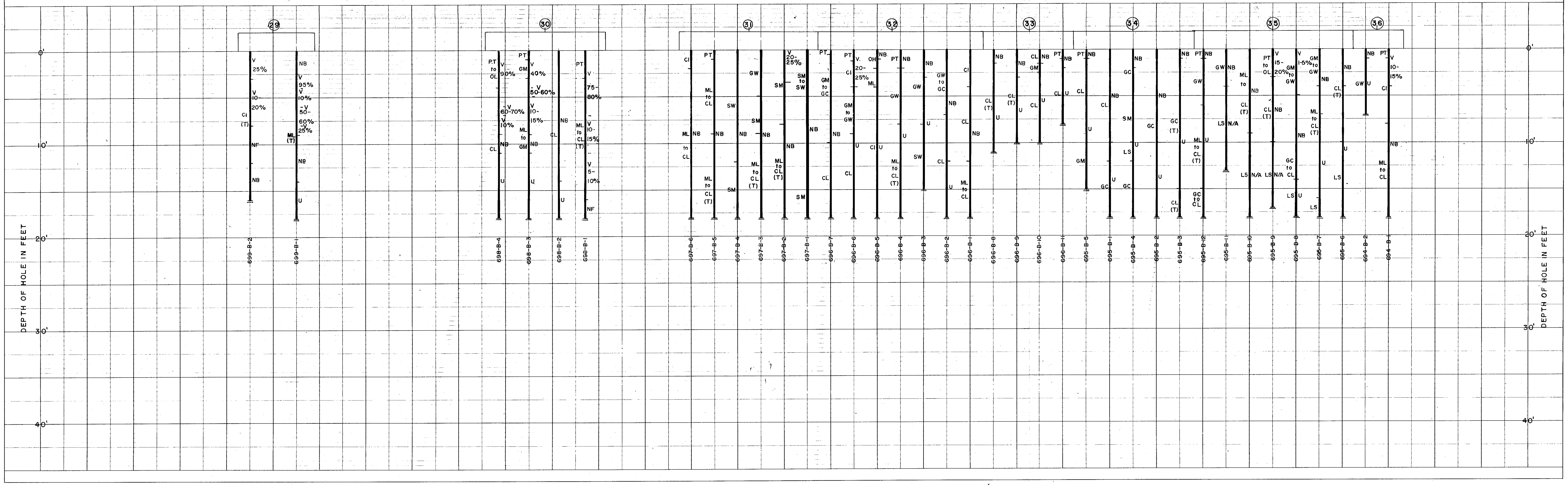
G	Gravel	W	Well Graded		Broken Section
S	Sand	P	Poorly Graded		End of Hole
M	Silt	L	Low Plasticity	NS	Not to Scale
C	Clay	I	Intermediate Plasticity	U	Unfrozen
Ls	Limestone	H	High Plasticity	N/A	Not Available
Sh	Shale	PT	Peat	NB)	Standard Ice
Dol	Dolomite	(T)	Till	NF)	Description
Bl	Boulder	(CL)	Low Plasticity Clayey Shale	V)	Symbols
O	Organic Soil	(18)	Borrow Area Number		

	MOSAIC NO. 68
Center-Line Terrain Evaluation - Summary Sheet	MILE 700 TO MILE 694

TERRAIN DESCRIPTION	TOPOGRAPHY	VEGETATION	SURFACE DRAINAGE	SURFICIAL SOIL	SUBSTRATA	GROUND ICE CONDITION 0 - 5'	GROUND ICE CONDITION 5 - 10'	GROUND ICE CONDITION >10'
699-C-3								
GM(WM)+ GM(PT)	Low Ridges to Flat Area. Generally Gentle Cross-Slopes	Black Spruce	Poor to Fair	0-1' of Organic Topsoil and Peat	Clay Till to Silt Till	Irregular Frozen and Unfrozen Zones V -V 30-75% to NB to U/F	V -V 10-30% to NB to U/F	NB to V 10% to U/F
GLB-1(PT) Peat Covered Glacial Lake Basin	Flat to Very Gentle Slope	Sparse Spruce and Tamarack	Poor	2-3' of Organic Soil	Clay-Silt Till to Shale Bedrock at 13'	NB (S/F)	U/F	U/F to V 5%
Slopewash Modified Ground Moraine With Local Peat Covered Areas	Gentle to Moderate Cross-Slopes Towards the Lake	Dense Black Spruce 15-25' High	Fair to Good	Local Peat Deposits 2-4' Thick	Clay Till to Silt Till Locally Shale Bedrock at About 13'	NB to V 60%	NB to U/F	NB to U/F
AFD Alluvial Fan Deposit	Moderate Slope	Black Spruce to 20' High	Fair	--	Gravel Over Clay Till at 5'	NF to NB (S/F)	NF to NB (S/F)	U/F
GM(SL)+GM(PT) Ground Moraine With Solifluction Features and Locally Peat Covered Areas	Moderate Slope	Thick Black Spruce to 20' High	Good	Locally Peat and Organic Silt 1-4' Thick	Clay Till to Silt Till	NB to V 50% (S/F)	NB to V 10% (S/F)	U/F
AFD Alluvial Fan Deposits	Moderate Slope	Thick Black Spruce	Good	4-5' of Peat	Silt Till to Clay Till Over Sand	V 20-55% (S/F)	V 45% to NB	U/F
694-C-2								

DRAWING No.	SHEET No.	TOTAL SHEETS
	38	





PLAN										
ALIGNMENT	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
TOPOGR. NOTES						
DRAINAGE						
BORROW AREAS						
STRUCTURES NOTED						

MOSAIC			
FLIGHT No.	FLOWN	BY	DATE
PHOTO No.	INTERPRETATION		
ORIGINAL SCALE	LINE LOCATED IN FIELD		

PROFILE						
℄ PROFILE	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
SOILS						
DESIGN GRADELINE						
DRAINAGE						
STRUCTURES NOTED						

REVISED 20/2/73

TERRAIN LEGEND

Symbol	Terrain Type	Physiographic Features	Materials Description
AFD	Alluvial Fan Deposit	Cone shaped, gently sloping stream outlet	Poorly sorted silt, sand gravel, some cobbles and boulders
AFP	Active Flood Plain	Exposed bars in stream or river channel	Sand and gravel in high energy streams to silt and sand in low energy streams
AMP	Alluvial Meander Plain (Mackenzie River Meander Plain)	Flat plain often with sand dunes on it	Sands and silty sands stratified or channel deposits
AMP-2	Alluvial Meander Plain (excluding the Mackenzie River Plain)	Flood plains filling bottom of the stream or river valley	Fine silt, sand or gravel as channel deposits
BR	Bedrock	Outcrop to continuous ridge	Exposed rock to rock with generally less than 5 feet of cover
DL	Deltaic Sand Plain	At the mouth of a river or creek	Silt topstratum over stratified silty sand and silt with some clay and pebbles
E	Esker	Narrow sharp ridge	Sand and/or gravel with some silt inclusions
FFP	Fossil Flood Plain	Flat plain may be dissected to rolling topography	Silty topstratum over sand and/or gravel of a flood plain of an inactive stream
GLB-1	Glacial Lake Basin (Better drained type)	Lowland occasionally swampy areas	Ice-rich to to medium plastic silty clay, occasionally with a trace of sand
GLB-2	Glacial Lake Basin (thermokarst type)	Lowlands usually swampy with thaw lakes	Usually peat covered glacio-lacustrine silty clay
GM	Ground Moraine (undifferentiated)	Flat to broad gentle slopes	Silt till to clay till usually some sand and gravel
HM	Hummocky Moraine	Large hummocks and short ridges with kettles	Mostly till with some sand and/or silt. Peat overlies silty clays in kettle depression
HT	High Terraces	Tabular bodies along the sides of and above present or abandoned river channels	Silt covered stratified sand and/or gravel of fluvial or outwash origin
K	Kames	Conical hill to short ridge	Complexly stratified sand and/or gravel with minor till or boulders
KT	Kame Terrace	Poorly expressed terraces	Dirty poorly sorted sand and/or gravel to till
LB	Lacustrine Basin	Postglacial ponded deposits in larger lowlying areas	Organic and inorganic clay, silt and fine sand
OW	Outwash Plains or Deltas	Tabular bodies	Sand and/or gravel
RKM	Ridge-and-Knoll Moraine	Drumlinized till plain. Rolling large linear features	Molded basal till low plastic silty-clay till
SD	Sand Dunes	Elongate Ridges to Barchans	Fine to medium sand
TS	Talus Slopes	Steep Slopes	Mainly coarse gravel cobbles and boulders

Surficial Features

• • • AS	Abandoned Strandlines
DR	Drumlinoid forms including flutings and glacial grooves with linear ridges
IWP	Ice Wedge Polygons, usually in ice-rich silt
RG	Rock and Talus glaciers along the Norman Range. Mixed ice and silt to boulders.
RS	Rock Slide to rock avalanche scars on the Norman Range
SK	Sinkholes in soluble bedrock

Topstratum Phases (Associated with Terrain Types)

Df	Thin (0 - 10 feet) of drift over bedrock surface
PT	Mixed bog and fen peats in post glacial ponded depression
SL	Slopewash or solifluction features. Topstratum of ice-rich poorly sorted silty clay and silty sand to gravel
WM	Wave modified, mainly a thin sandy to gravelly washed layer over till

Complexes are shown as combinations of two terrain types with or without phases that pertain to the parent type.

Terrain Symbols are modified from Canadian Gas Arctic Study Limited Terrain Study for this area.

Legend For Mackenzie Highway Mosaic

	Mackenzie Highway
	Borrow Areas
- - - - -	Access Road to borrow area on pre-existing cutlines
———	Cleared access to borrow areas
18	Borrow area number
689-C-4	Borehole number
721 ———	Mileage
RKM	Terrain Outlines

Borrow Profile Legend

G	Gravel	W	Well Graded		Broken Section
S	Sand	P	Poorly Graded		End of Hole
M	Silt	L	Low Plasticity	NS	Not to Scale
C	Clay	I	Intermediate Plasticity	U	Unfrozen
Ls	Limestone	H	High Plasticity	N/A	Not Available
Sh	Shale	PT	Peat	NB)	Standard Ice
Dol	Dolomite	(T)	Till	NF)	Description
Bl	Boulder	(CL)	Low Plasticity Clayey Shale	V)	Symbols
O	Organic Soil	18	Borrow Area Number		

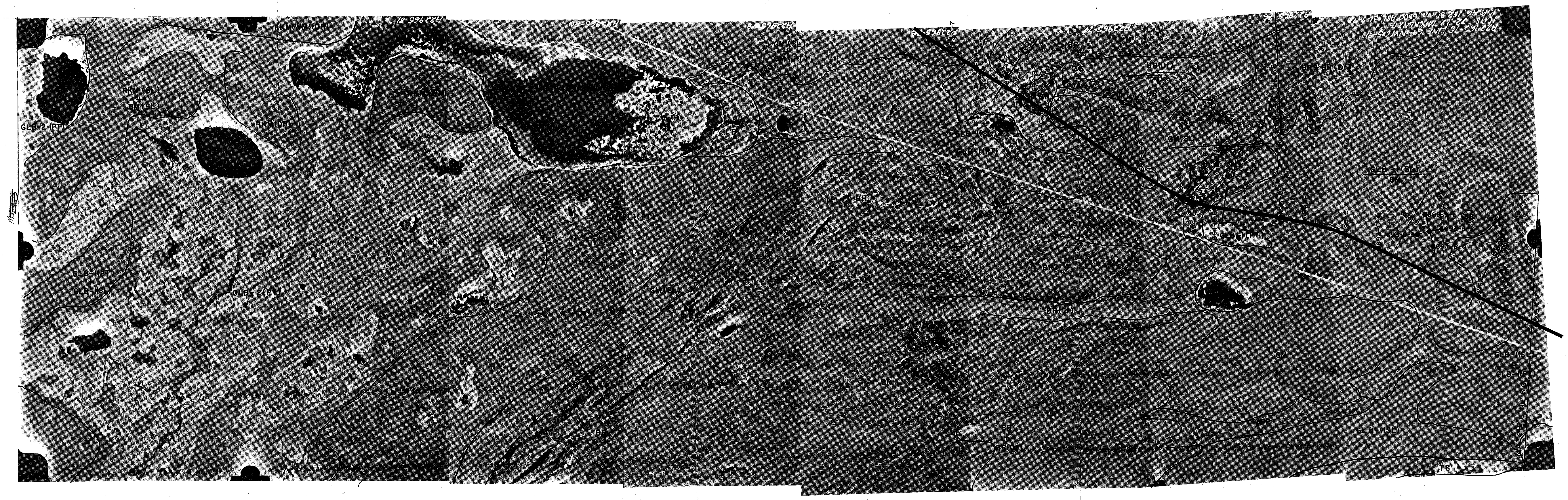
						MOSAIC NO. 67		
Center-Line Terrain Evaluation - Summary Sheet						MILE 694 TO MILE 691		
						GROUND ICE CONDITION		
TERRAIN DESCRIPTION	TOPOGRAPHY	VEGETATION	SURFACE DRAINAGE	SURFICIAL SOIL	SUBSTRATA	0 - 5'	5 - 10'	>10'
694-C-2								
GM(SL) Slopewash Modified Ground Moraine	Moderate to Steep Slope	Thick Black Spruce	Good	1' of Peat	Silt-Clay Till to 18+'	V 30-35%	V 20-25%	U/F
K Kame	Low Hill	Black Spruce	Good		Gravel	U/F	U/F	U/F
GM(SL) Slopewash Modified Ground Moraine	Steep Cross-Cross Slopes	Black Spruce	Fair to Good	No Borehole Data Available. See Similar Unit Proceeding Former Unit.				
K Kame	Low Hill on Steep Cross-Slope	Black Spruce	Good		Gravel to 18+'	U/F	U/F	U/F
GM(SL) Slopewash Modified Ground Moraine	Steep Cross-Slopes	Black Spruce		No Borehole Data Available. See Similar Unit Proceeding Former Unit.				
BR+BR(Df) Drift Covered Bedrock High	High Steep Sided Hill	Black Spruce	Good	Sand to 5'	Gravel to 9' Unable to Drill Further	V 15-20%	U/F	N/A
GM(SL)(PT) Slopewash Modified Ground Moraine With Local Peat Covered Areas	Moderate to Gentle Slopes	Black Spruce and Some Willow	Good	2-4' of Peat and Organic Soil	Silt and Silt Till to Clay Till	V to 85% (Peat) Genera-lly NB (TILL)	NB to V 25%	NB to V 25%
693-C-7								

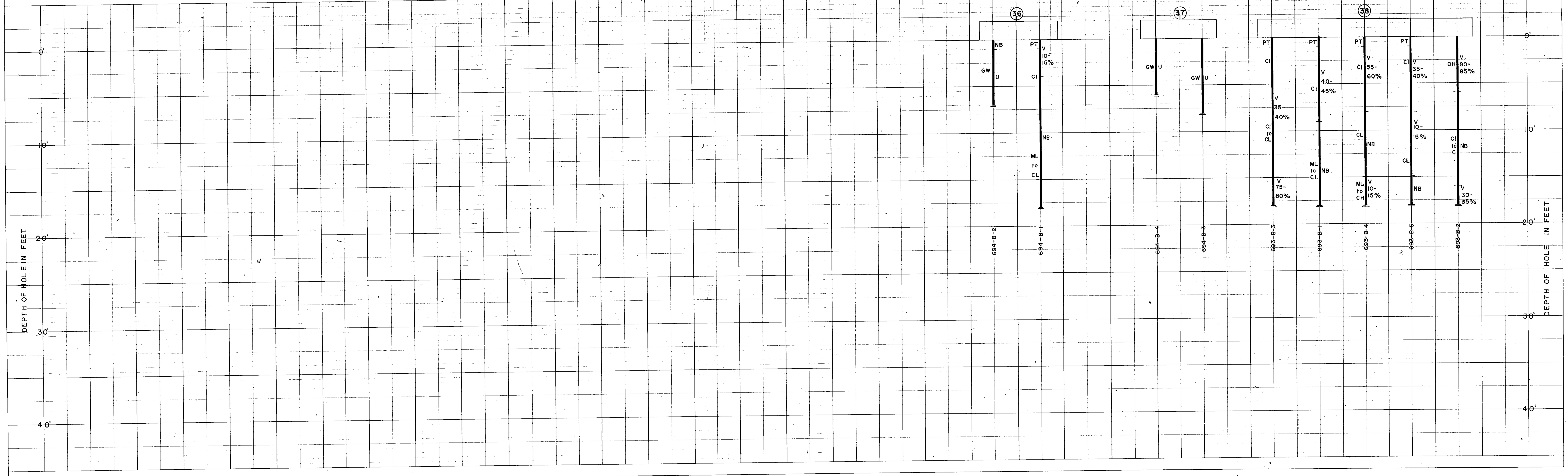
DRAWING No.	SHEET No.	TOTAL SHEETS
	87	

PLAN	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
ALIGNMENT						
TOPOG. NOTES						
DRAINAGE						
BORROW AREAS						
STRUCTURES NOTED						

MOSAIC		BY	DATE
FLIGHT No.	FLOWN		
PHOTO No.	INTERPRETATION		
ORIGINAL SCALE	LINE LOCATED IN FIELD		

PROFILE	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
℄ PROFILE						
SOILS						
DESIGN GRADELINE						
DRAINAGE						
STRUCTURES NOTED						





REVISED 20/2/73

TERRAIN LEGEND

Symbol	Terrain Type	Physiographic Features	Materials Description
AFD	Alluvial Fan Deposit	Cone shaped, gently sloping stream outlet	Poorly sorted silt, sand gravel, some cobbles and boulders
AFP	Active Flood Plain	Exposed bars in stream or river channel	Sand and gravel in high energy streams to silt and sand in low energy streams
AMP	Alluvial Meander Plain (Mackenzie River Meander Plain)	Flat plain often with sand dunes on it	Sands and silty sands stratified or channel deposits
AMP-2	Alluvial Meander Plain (excluding the Mackenzie River Plain)	Flood plains filling bottom of the stream or river valley	Fine silt, sand or gravel as channel deposits
BR	Bedrock	Outcrop to continuous ridge	Exposed rock to rock with generally less than 5 feet of cover
DL	Deltaic Sand Plain	At the mouth of a river or creek	Silt topstratum over stratified silty sand and silt with some clay and pebbles
E	Esker	Narrow sharp ridge	Sand and/or gravel with some silt inclusions
FFP	Fossil Flood Plain	Flat plain may be dissected to rolling topography	Silty topstratum over sand and/or gravel of a flood plain of an inactive stream
GLB-1	Glacial Lake Basin (Better drained type)	Lowland occasionally swampy areas	Ice-rich to to medium plastic silty clay, occasionally with a trace of sand
GLB-2	Glacial Lake Basin (thermokarst type)	Lowlands usually swampy with thaw lakes	Usually peat covered glacio-lacustrine silty clay
GM	Ground Moraine (undifferentiated)	Flat to broad gentle slopes	Silt till to clay till usually some sand and gravel
HM	Hummocky Moraine	Large hummocks and short ridges with kettles	Mostly till with some sand and/or silt. Peat overlies silty clays in kettle depression
HT	High Terraces	Tabular bodies along the sides of and above present or abandoned river channels	Silt covered stratified sand and/or gravel of fluvial or outwash origin
K	Kames	Conical hill to short ridge	Complexly stratified sand and/or gravel with minor till or boulders
KT	Kame Terrace	Poorly expressed terraces	Dirty poorly sorted sand and/or gravel to till
LB	Lacustrine Basin	Postglacial ponded deposits in larger lowlying areas	Organic and inorganic clay, silt and fine sand
OW	Outwash Plains or Deltas	Tabular bodies	Sand and/or gravel
RKM	Ridge-and-Knoll Moraine	Drumlinized till plain. Rolling large linear features	Molded basal till low plastic silty-clay till
SD	Sand Dunes	Elongate Ridges to Barchans	Fine to medium sand
TS	Talus Slopes	Steep Slopes	Mainly coarse gravel cobbles and boulders

Surficial Features

AS	Abandoned Strandlines
DR	Drumlinoid forms including flutings and glacial grooves with linear ridges
IWP	Ice Wedge Polygons, usually in ice-rich silt
RG	Rock and Talus glaciers along the Norman Range. Mixed ice and silt to boulders.
RS	Rock Slide to rock avalanche scars on the Norman Range
SK	Sinkholes in soluble bedrock

Topstratum Phases (Associated with Terrain Types)

Df	Thin (0 - 10 feet) of drift over bedrock surface
PT	Mixed bog and fen peats in post glacial ponded depression
SL	Slopewash or solifluction features. Topstratum of ice-rich poorly sorted silty clay and silty sand to gravel
WM	Wave modified, mainly a thin sandy to gravelly washed layer over till

Complexes are shown as combinations of two terrain types with or without phases that pertain to the parent type.

Terrain Symbols are modified from Canadian Gas Arctic Study Limited Terrain Study for this area.

Legend For Mackenzie Highway Mosaic

	Mackenzie Highway
	Borrow Areas
	Access Road to borrow area on pre-existing cutlines
	Cleared access to borrow areas
18	Borrow area number
689-C-4	Borehole number
721	Mileage
RKM	Terrain Outlines

Borrow Profile Legend

G	Gravel	W	Well Graded		Broken Section
S	Sand	P	Poorly Graded		End of Hole
M	Silt	L	Low Plasticity	NS	Not to Scale
C	Clay	I	Intermediate Plasticity	U	Unfrozen
Ls	Limestone	H	High Plasticity	N/A	Not Available
Sh	Shale	PT	Peat	NB)	Standard Ice
Dol	Dolomite	(T)	Till	NF)	Description
Bl	Boulder	(CL)	Low Plasticity Clayey Shale	V)	Symbols
O	Organic Soil	18	Borrow Area Number		

Center-Line Terrain Evaluation - Summary Sheet						MOSAIC NO. 66 MILE 693 TO MILE 687		
TERRAIN DESCRIPTION	TOPOGRAPHY	VEGETATION	SURFACE DRAINAGE	SURFICIAL SOIL	SUBSTRATA	GROUND ICE CONDITION		
						0 - 5'	5 - 10'	>10'
693-C-7								
GLB-1(SL)+GLB-(PT) Slopewash Modified Glacial Lake Basin With Local Peat Covered Areas	Flat to Gently Sloping	Fire-Killed Black Spruce 10-15' High	Fair to Good Locally Poor	1-3' of Peat and Organic Topsoil	Lacustrine Clay and Silt Often Organic Rich Over Clay Till	Generally V 35% up to 85%	Generally V 25-30% up to 50%	NF to V 15-20%
GLB-1(SL) GM(PT) Slopewash Modified Glacial Lake Basin Over Ground Moraine With Local Peat Covered Areas	Steep Cross-Slopes and Rolling Hills With Deep Gullies	Fire-Killed Black Spruce to Dense Spruce to 10-15' High	Fair to Good	Locally Peat and Organic Soil up to to 6' or Lacustrine Silts and Clays Locally up to 14'	Clay-Silt Till Generally at 0-4'	Generally V 20% as High as 90%	Generally V 10-30% as High as 50%	NB to V 30% as High as 85%
Donnelly River Crossing - See Separate Report For Detail								
Glacial Lake Basin Slope-wash Modified	Gentle to Moderate Cross-Slopes	Black Spruce	Good	Peat and Organic Clay to 2'	Lacustrine Clay, Locally Organic in Upper Portion	Generally V 30-40% to 80%	Generally V 20% to 40%	NB to V 40%
Chick Lake Creek - See Separate Report For Detail								
Glacial Lake Basin Slope-wash to Modified	Gentle to Moderate Cross-Slopes	Black Spruce	Good	Peat and Organic Topsoil Generally 1-3' up to 5'	Lacustrine Clay	V 20-40% as High as 90% in Peat	V 15-20%	NB to U/F
687-C-8								

DRAWING No.	SHEET No.	TOTAL SHEETS
	66	

PLAN

ALIGNMENT
TOPOG. NOTES
DRAINAGE
BORROW AREAS
STRUCTURES NOTED

SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE

MOSAIC

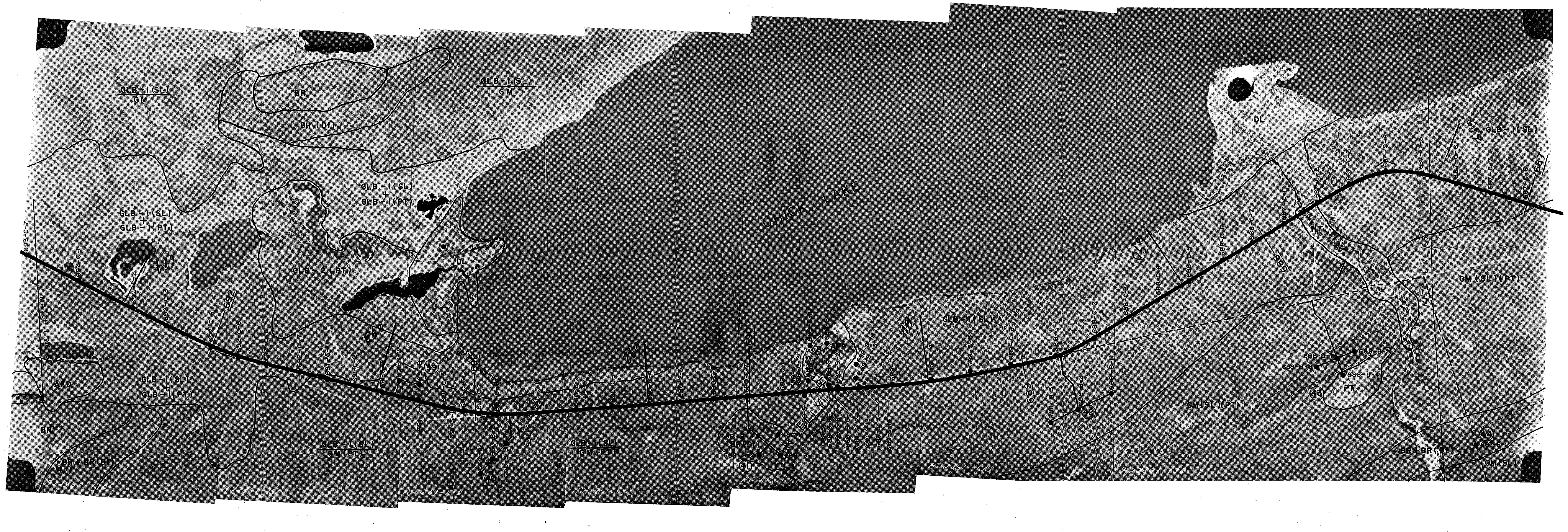
FLIGHT No.
PHOTO No.
ORIGINAL SCALE

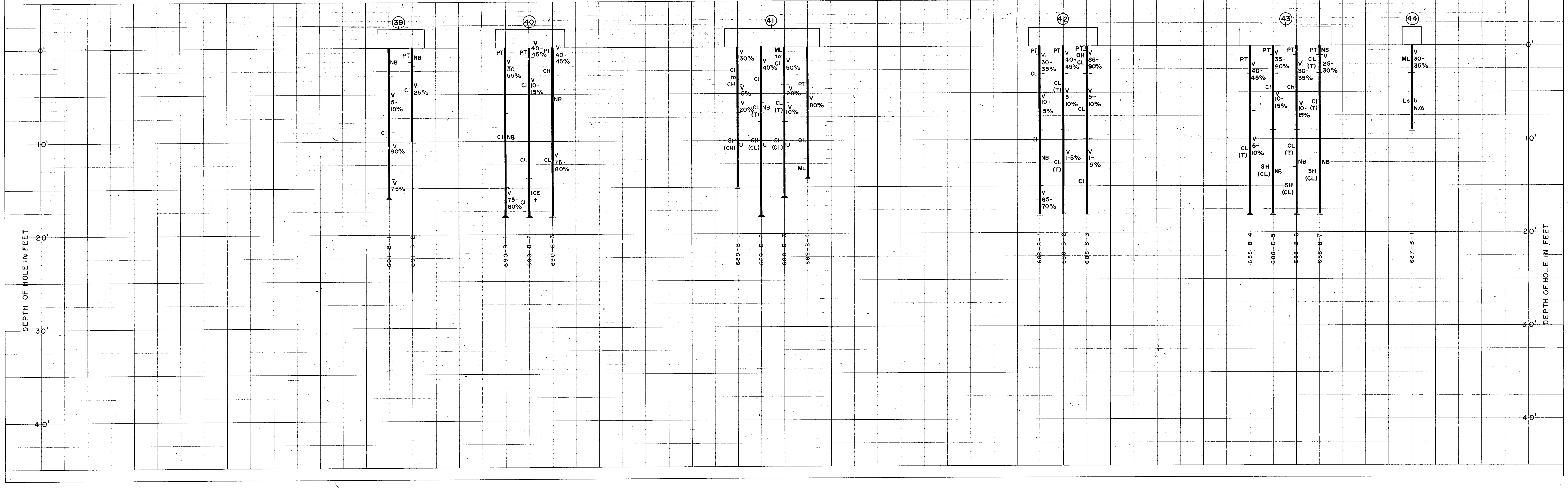
	BY	DATE
FLOWN		
INTERPRETATION		
LINE LOCATED IN FIELD		

PROFILE

℄ PROFILE
SOILS
DESIGN GRADELINE
DRAINAGE
STRUCTURES NOTED

SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE





REVISED 20/2/73

TERRAIN LEGEND

Symbol	Terrain Type	Physiographic Features	Materials Description
AFD	Alluvial Fan Deposit	Cone shaped, gently sloping stream outlet	Poorly sorted silt, sand gravel, some cobbles and boulders
AFP	Active Flood Plain	Exposed bars in stream or river channel	Sand and gravel in high energy streams to silt and sand in low energy streams
AMP	Alluvial Meander Plain (Mackenzie River Meander Plain)	Flat plain often with sand dunes on it	Sands and silty sands stratified or channel deposits
AMP-2	Alluvial Meander Plain (excluding the Mackenzie River Plain)	Flood plains filling bottom of the stream or river valley	Fine silt, sand or gravel as channel deposits
BR	Bedrock	Outcrop to continuous ridge	Exposed rock to rock with generally less than 5 feet of cover
DL	Deltaic Sand Plain	At the mouth of a river or creek	Silt topstratum over stratified silty sand and silt with some clay and pebbles
E	Esker	Narrow sharp ridge	Sand and/or gravel with some silt inclusions
FFP	Fossil Flood Plain	Flat plain may be dissected to rolling topography	Silty topstratum over sand and/or gravel of a flood plain of an inactive stream
GLB-1	Glacial Lake Basin (Better drained type)	Lowland occasionally swampy areas	Ice-rich to to medium plastic silty clay, occasionally with a trace of sand
GLB-2	Glacial Lake Basin (thermokarst type)	Lowlands usually swampy with thaw lakes	Usually peat covered glacio-lacustrine silty clay
GM	Ground Moraine (undifferentiated)	Flat to broad gentle slopes	Silt till to clay till usually some sand and gravel
HM	Hummocky Moraine	Large hummocks and short ridges with kettles	Mostly till with some sand and/or silt. Peat overlies silty clays in kettle depression
HT	High Terraces	Tabular bodies along the sides of and above present or abandoned river channels	Silt covered stratified sand and/or gravel of fluvial or outwash origin
K	Kames	Conical hill to short ridge	Complexly stratified sand and/or gravel with minor till or boulders
KT	Kame Terrace	Poorly expressed terraces	Dirty poorly sorted sand and/or gravel to till
LB	Lacustrine Basin	Postglacial ponded deposits in larger lowlying areas	Organic and inorganic clay, silt and fine sand
OW	Outwash Plains or Deltas	Tabular bodies	Sand and/or gravel
RKM	Ridge-and-Knoll Moraine	Drumlinized till plain. Rolling large linear features	Molded basal till low plastic silty-clay till
SD	Sand Dunes	Elongate Ridges to Barchans	Fine to medium sand
TS	Talus Slopes	Steep Slopes	Mainly coarse gravel cobbles and boulders

Surficial Features

• • • AS	Abandoned Strandlines
DR	Drumlinoid forms including flutings and glacial grooves with linear ridges
IWP	Ice Wedge Polygons, usually in ice-rich silt
RG	Rock and Talus glaciers along the Norman Range. Mixed ice and silt to boulders.
RS	Rock Slide to rock avalanche scars on the Norman Range
SK	Sinkholes in soluble bedrock

Topstratum Phases (Associated with Terrain Types)

Df	Thin (0 - 10 feet) of drift over bedrock surface
PT	Mixed bog and fen peats in post glacial ponded depression
SL	Slopewash or solifluction features. Topstratum of ice-rich poorly sorted silty clay and silty sand to gravel
WM	Wave modified, mainly a thin sandy to gravelly washed layer over till

Complexes are shown as combinations of two terrain types with or without phases that pertain to the parent type.

Terrain Symbols are modified from Canadian Gas Arctic Study Limited Terrain Study for this area.

Legend For Mackenzie Highway Mosaic

Mackenzie Highway
Borrow Areas
Access Road to borrow area on pre-existing cutlines
Cleared access to borrow areas
(18) Borrow area number
689-C-4 Borehole number
721 Mileage
RKM Terrain Outlines

Borrow Profile Legend

G	Gravel	W	Well Graded		Broken Section
S	Sand	P	Poorly Graded		End of Hole
M	Silt	L	Low Plasticity	NS	Not to Scale
C	Clay	I	Intermediate Plasticity	U	Unfrozen
Ls	Limestone	H	High Plasticity	N/A	Not Available
Sh	Shale	PT	Peat	NB)	Standard Ice
Dol	Dolomite	(T)	Till	NF)	Description
Bl	Boulder	(CL)	Low Plasticity Clayey Shale	V)	Symbols
O	Organic Soil	(18)	Borrow Area Number		

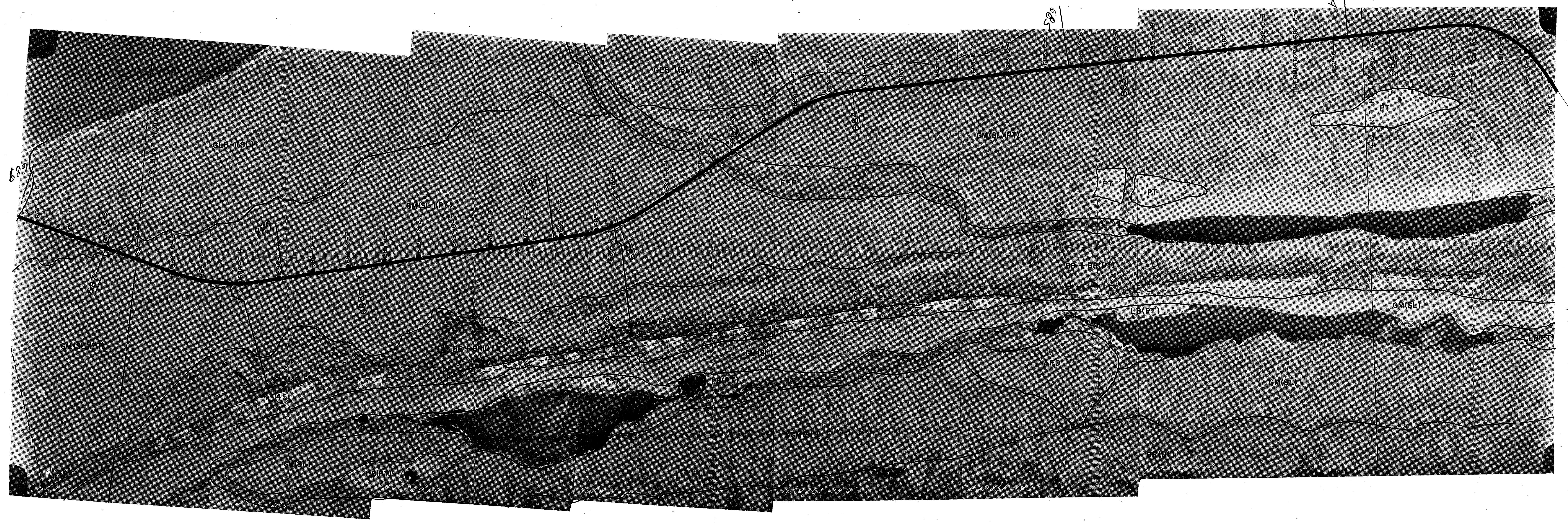
Center-Line Terrain Evaluation - Summary Sheet						MOSAIC NO. 65 MILE 689 TO MILE 683		
TERRAIN DESCRIPTION	TOPOGRAPHY	VEGETATION	SURFACE DRAINAGE	SURFICIAL SOIL	SUBSTRATA	GROUND ICE CONDITION		
						0 - 5'	5 - 10'	>10'
687-C-8								
GM(SL)(PT) Ground Moraine Modified by Slopewash With Local Peat Deposits	Gentle To Moderate Slopes Slopes	Black Spruce	Good	1-2' of Peat	Clay Till to 18+'	NB to V 35% (S/F)	NB to V 10% (S/F)	NB (S/F)
Fossil Flood Plain	- No Drill Hole Data Available. Deep Peat Deposits and Possible High Ice Contents Are Possible.							
GM(SL)(PT) Ground Moraine Modified by Slopewash With Local Peat Deposits	Moderate to to Gentle Slopes	Black Spruce	Good Drainage	1-2' of Peat	Clay Till and Silt Till Locally Shallow Shale Bedrock	NB to V 25-30% Locally as High as 90% Ice	NB to V 5-10%	NB to U/F
681-C-4								

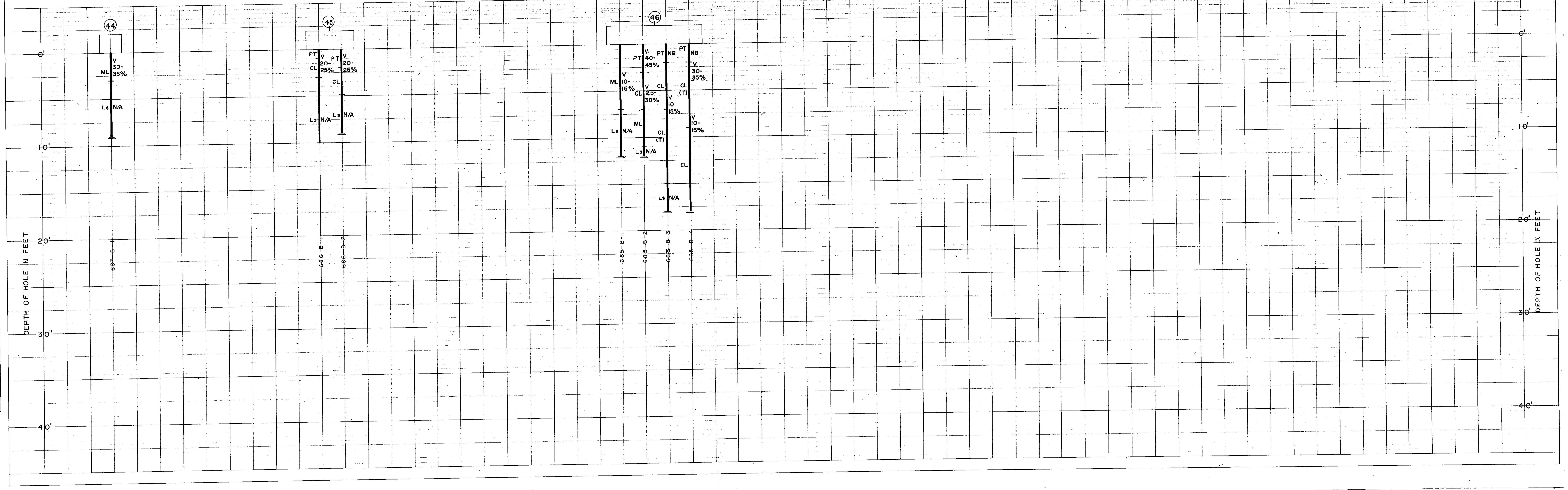
DRAWING No.	SHEET No.	TOTAL SHEETS
	65	

PLAN	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
ALIGNMENT						
TOPOGR. NOTES						
DRAINAGE						
BORROW AREAS						
STRUCTURES NOTED						

MOSAIC		BY	DATE
FLIGHT No.	F.OWN		
PHOTO No.	INTERPRETATION		
ORIGINAL SCALE	LINE LOCATED IN FIELD		

PROFILE	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
℄ PROFILE						
SOILS						
DESIGN GRADELINE						
DRAINAGE						
STRUCTURES NOTED						





REVISED 20/2/73

TERRAIN LEGEND

Symbol	Terrain Type	Physiographic Features	Materials Description
AFD	Alluvial Fan Deposit	Cone shaped, gently sloping stream outlet	Poorly sorted silt, sand gravel, some cobbles and boulders
AFP	Active Flood Plain	Exposed bars in stream or river channel	Sand and gravel in high energy streams to silt and sand in low energy streams
AMP	Alluvial Meander Plain (Mackenzie River Meander Plain)	Flat plain often with sand dunes on it	Sands and silty sands stratified or channel deposits
AMP-2	Alluvial Meander Plain (excluding the Mackenzie River Plain)	Flood plains filling bottom of the stream or river valley	Fine silt, sand or gravel as channel deposits
BR	Bedrock	Outcrop to continuous ridge	Exposed rock to rock with generally less than 5 feet of cover
DL	Deltaic Sand Plain	At the mouth of a river or creek	Silt topstratum over stratified silty sand and silt with some clay and pebbles
E	Esker	Narrow sharp ridge	Sand and/or gravel with some silt inclusions
FFP	Fossil Flood Plain	Flat plain may be dissected to rolling topography	Silty topstratum over sand and/or gravel of a flood plain of an inactive stream
GLB-1	Glacial Lake Basin (Better drained type)	Lowland occasionally swampy areas	Ice-rich to to medium plastic silty clay, occasionally with a trace of sand
GLB-2	Glacial Lake Basin (thermokarst type)	Lowlands usually swampy with thaw lakes	Usually peat covered glacio-lacustrine silty clay
GM	Ground Moraine (undifferentiated)	Flat to broad gentle slopes	Silt till to clay till usually some sand and gravel
HM	Hummocky Moraine	Large hummocks and short ridges with kettles	Mostly till with some sand and/or silt. Peat overlies silty clays in kettle depression
HT	High Terraces	Tabular bodies along the sides of and above present or abandoned river channels	Silt covered stratified sand and/or gravel of fluvial or outwash origin
K	Kames	Conical hill to short ridge	Complexly stratified sand and/or gravel with minor till or boulders
KT	Kame Terrace	Poorly expressed terraces	Dirty poorly sorted sand and/or gravel to till
LB	Lacustrine Basin	Postglacial ponded deposits in larger lowlying areas	Organic and inorganic clay, silt and fine sand
OW	Outwash Plains or Deltas	Tabular bodies	Sand and/or gravel
RKM	Ridge-and-Knoll Moraine	Drumlinized till plain. Rolling large linear features	Molded basal till low plastic silty-clay till
SD	Sand Dunes	Elongate Ridges to Barchans	Fine to medium sand
TS	Talus Slopes	Steep Slopes	Mainly coarse gravel cobbles and boulders

Surficial Features

AS	Abandoned Strandlines
DR	Drumlinoid forms including flutings and glacial grooves with linear ridges
IWP	Ice Wedge Polygons, usually in ice-rich silt
RG	Rock and Talus glaciers along the Norman Range. Mixed ice and silt to boulders.
RS	Rock Slide to rock avalanche scars on the Norman Range
SK	Sinkholes in soluble bedrock

Topstratum Phases (Associated with Terrain Types)

Df	Thin (0 - 10 feet) of drift over bedrock surface
PT	Mixed bog and fen peats in post glacial ponded depression
SL	Slopewash or solifluction features. Topstratum of ice-rich poorly sorted silty clay and silty sand to gravel
WM	Wave modified, mainly a thin sandy to gravelly washed layer over till

Complexes are shown as combinations of two terrain types with or without phases that pertain to the parent type.

Terrain Symbols are modified from Canadian Gas Arctic Study Limited Terrain Study for this area.

Legend For Mackenzie Highway Mosaic

- Mackenzie Highway
- Borrow Areas
- Access Road to borrow area on pre-existing cutlines
- Cleared access to borrow areas
- 18 Borrow area number
- 689-C-4 Borehole number
- 721 Mileage
- RKM Terrain Outlines

Borrow Profile Legend

G	Gravel	W	Well Graded		Broken Section
S	Sand	P	Poorly Graded		End of Hole
M	Silt	L	Low Plasticity	NS	Not to Scale
C	Clay	I	Intermediate Plasticity	U	Unfrozen
Ls	Limestone	H	High Plasticity	N/A	Not Available
Sh	Shale	PT	Peat	NB)	Standard Ice
Dol	Dolomite	(T)	Till	NF)	Description
Bl	Boulder	(CL)	Low Plasticity Clayey Shale	V)	Symbols
O	Organic Soil	18	Borrow Area Number		

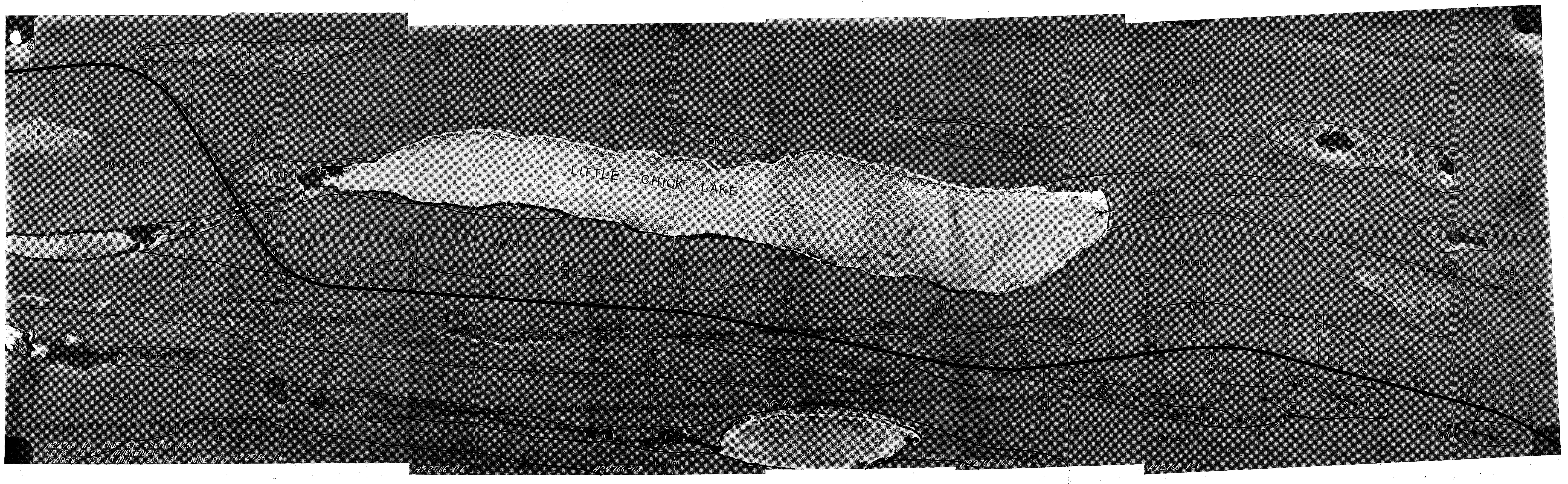
Center-Line Terrain Evaluation - Summary Sheet						MOSAIC NO. 64 MILE 684 TO MILE 678		
TERRAIN DESCRIPTION	TOPOGRAPHY	VEGETATION	SURFACE DRAINAGE	SURFICIAL SOIL	SUBSTRATA	GROUND ICE CONDITION		
						0 - 5'	5 - 10'	>10'
681-C-4 Continued								
Stream Channel, See Separate Report								
GM(SL) Ground Moraine Modified by Slopewash	Moderate Slope to East	Black Spruce	Good	1-2' of Peat Locally Over Organic Clay to 4' Depth	Clay Till & Silt to 14-16' Depth Over Shale Bedrock	V 25-30% up to 90%	NB to V 15%	NB to U/F
Bedrock and Drift Covered Bedrock	On Bedrock Ridge	Sparse Black Spruce and Birch 10-20' High	Good to Excellent	0-3' of Peat	Clay Till Over Limestone Bedrock at 0-10' Depth Generally Below 8'	Peat V 30-90% Upper Till V 5-30%	NB to V 30%	U/F
678-C-5								

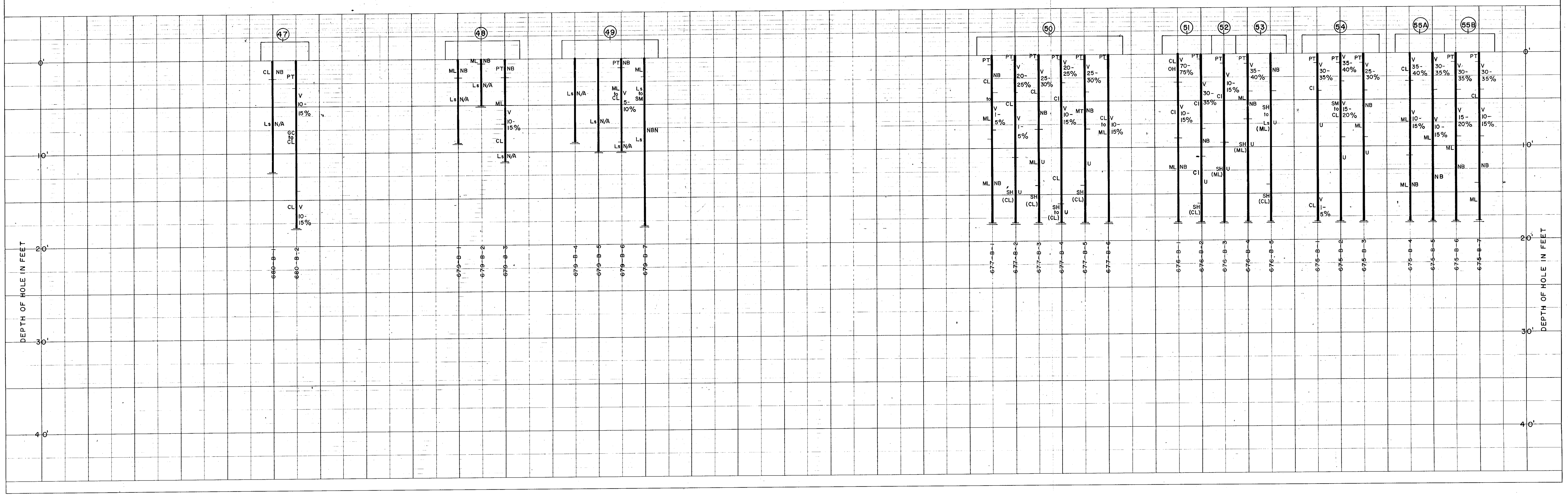
DRAWING No.	SHEET No.	TOTAL SHEETS
	64	

PLAN	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
ALIGNMENT						
TOPOGR. NOTES						
DRAINAGE						
BORROW AREAS						
STRUCTURES NOTED						

MOSAIC		BY	DATE
FLIGHT No.	FLOWN		
PHOTO No.	INTERPRETATION		
ORIGINAL SCALE	LINE LOCATED IN FIELD		

PROFILE	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
℄ PROFILE						
SOILS						
DESIGN GRADELINE						
DRAINAGE						
STRUCTURES NOTED						





REVISED 20/2/73

TERRAIN LEGEND

Symbol	Terrain Type	Physiographic Features	Materials Description
AFD	Alluvial Fan Deposit	Cone shaped, gently sloping stream outlet	Poorly sorted silt, sand gravel, some cobbles and boulders
AFP	Active Flood Plain	Exposed bars in stream or river channel	Sand and gravel in high energy streams to silt and sand in low energy streams
AMP	Alluvial Meander Plain (Mackenzie River Meander Plain)	Flat plain often with sand dunes on it	Sands and silty sands stratified or channel deposits
AMP-2	Alluvial Meander Plain (excluding the Mackenzie River Plain)	Flood plains filling bottom of the stream or river valley	Fine silt, sand or gravel as channel deposits
BR	Bedrock	Outcrop to continuous ridge	Exposed rock to rock with generally less than 5 feet of cover
DL	Deltaic Sand Plain	At the mouth of a river or creek	Silt topstratum over stratified silty sand and silt with some clay and pebbles
E	Esker	Narrow sharp ridge	Sand and/or gravel with some silt inclusions
FFP	Fossil Flood Plain	Flat plain may be dissected to rolling topography	Silty topstratum over sand and/or gravel of a flood plain of an inactive stream
GLB-1	Glacial Lake Basin (Better drained type)	Lowland occasionally swampy areas	Ice-rich to to medium plastic silty clay, occasionally with a trace of sand
GLB-2	Glacial Lake Basin (thermokarst type)	Lowlands usually swampy with thaw lakes	Usually peat covered glacio-lacustrine silty clay
GM	Ground Moraine (undifferentiated)	Flat to broad gentle slopes	Silt till to clay till usually some sand and gravel
HM	Hummocky Moraine	Large hummocks and short ridges with kettles	Mostly till with some sand and/or silt. Peat overlies silty clays in kettle depression
HT	High Terraces	Tabular bodies along the sides of and above present or abandoned river channels	Silt covered stratified sand and/or gravel of fluvial or outwash origin
K	Kames	Conical hill to short ridge	Complexly stratified sand and/or gravel with minor till or boulders
KT	Kame Terrace	Poorly expressed terraces	Dirty poorly sorted sand and/or gravel to till
LB	Lacustrine Basin	Postglacial ponded deposits in larger lowlying areas	Organic and inorganic clay, silt and fine sand
OW	Outwash Plains or Deltas	Tabular bodies	Sand and/or gravel
RKM	Ridge-and-Knoll Moraine	Drumlinized till plain. Rolling large linear features	Molded basal till low plastic silty-clay till
SD	Sand Dunes	Elongate Ridges to Barchans	Fine to medium sand
TS	Talus Slopes	Steep Slopes	Mainly coarse gravel cobbles and boulders

Surficial Features

AS	Abandoned Strandlines
DR	Drumlinoid forms including flutings and glacial grooves with linear ridges
IWP	Ice Wedge Polygons, usually in ice-rich silt
RG	Rock and Talus glaciers along the Norman Range. Mixed ice and silt to boulders.
RS	Rock Slide to rock avalanche scars on the Norman Range
SK	Sinkholes in soluble bedrock

Topstratum Phases (Associated with Terrain Types)

Df	Thin (0 - 10 feet) of drift over bedrock surface
PT	Mixed bog and fen peats in post glacial ponded depression
SL	Slopewash or solifluction features. Topstratum of ice-rich poorly sorted silty clay and silty sand to gravel
WM	Wave modified, mainly a thin sandy to gravelly washed layer over till

Complexes are shown as combinations of two terrain types with or without phases that pertain to the parent type.

Terrain Symbols are modified from Canadian Gas Arctic Study Limited Terrain Study for this area.

Legend For Mackenzie Highway Mosaic

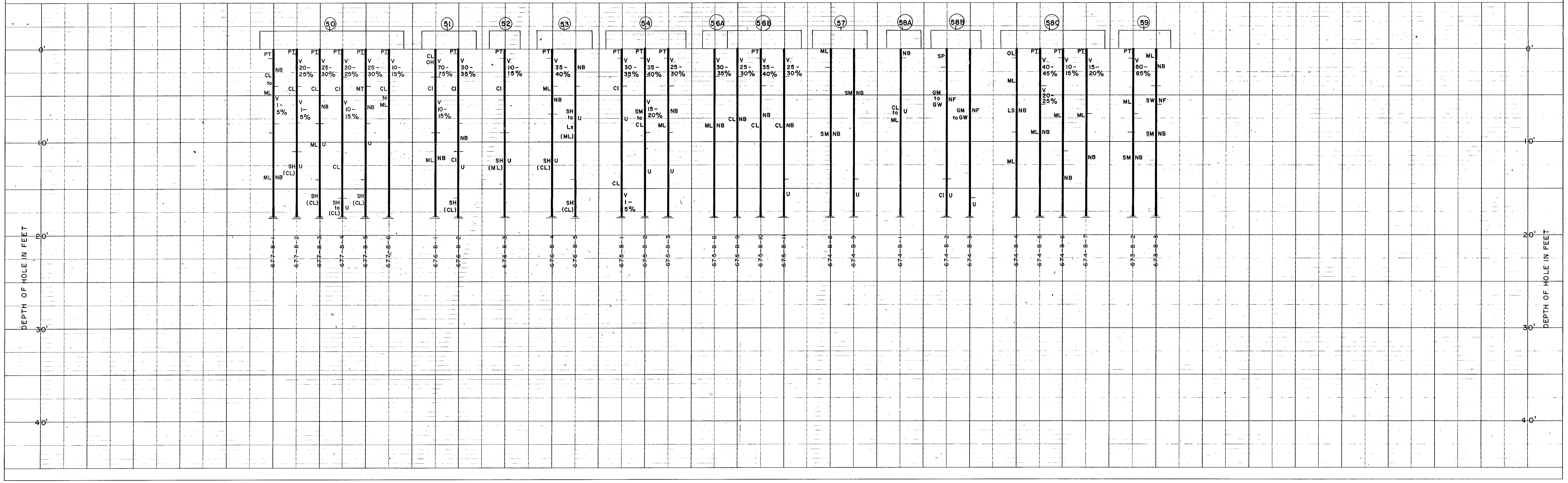
	Mackenzie Highway
	Borrow Areas
	Access Road to borrow area on pre-existing cutlines
	Cleared access to borrow areas
18	Borrow area number
689-C-4	Borehole number
721	Mileage
RKM	Terrain Outlines

Borrow Profile Legend

G	Gravel	W	Well Graded		Broken Section
S	Sand	P	Poorly Graded		End of Hole
M	Silt	L	Low Plasticity	NS	Not to Scale
C	Clay	I	Intermediate Plasticity	U	Unfrozen
Ls	Limestone	H	High Plasticity	N/A	Not Available
Sh	Shale	PT	Peat	NB)	Standard Ice
Dol	Dolomite	(T)	Till	NF)	Description
Bl	Boulder	(CL)	Low Plasticity Clayey Shale	V)	Symbols
O	Organic Soil	18	Borrow Area Number		

Center-Line Terrain Evaluation - Summary Sheet						MOSAIC NO. 63 MILE 680 TO MILE 676		
TERRAIN DESCRIPTION	TOPOGRAPHY	VEGETATION	SURFACE DRAINAGE	SURFICIAL SOIL	SUBSTRATA	GROUND ICE CONDITION		
						0-5'	5-10'	>10'
678-C-5								
BR(Df) Bedrock With Thin Cover of Glacial Drift	High Bedrock Ridge	Black Spruce and Birch 10-30' High	Fair to Good	0-1' of Peat	5-10' of Clay Till Over Bedrock	V 25-40%	NB	N/A
GM+GM(PT) Ground Moraine Plus Ground Moraine With a Thin Cover of Peat	Moderate Slopes to Flat Area	Sparse Black Spruce Less Than 15' High	Generally Good Locally Poor	Peat and Organic Soils Generally 0-3' Thick Locally to 6'	14-18' of Clay Till and Silt Till Locally Shale and Limestone Bedrock at 14-18'	V 20-40%	V 10-20%	NB to U/F
GM(SL) Slopewash and Soliflu-ction Modified Ground Moraine	Moderate to Steep Slopes and Cross-Slopes. Route is Descending (southward) Through the Gap Between Gibson Ridge and Brokenoff Mountain	Black Spruce	Good	1-2' of Peat	18'+ of Clay and Clay Till to Silt Till	V 30-50%	NB to V 25%	U/F to NB to Vx 5%
GLB-1(SL) Slopewash and Solflu-ction Modified Glacial Lake Basin	Steep Slopes and Cross-Slopes	Black Spruce	Good	Generally 1' of Peat	Lacustrine Clay and Silt to 18+' Depth	V 10-40%	NB to	NB
HM Hummocky Moraine	Moderate Slopes	Sparse Black Spruce and Willow	Poor	1' of Peat	Sand or Silt to 18'	NB	NB	NB to U/F
GLB-1(SL) Slopewash and Soliflu-ction Modi-fied Glacial Lake Basin	Steep to Moderate Slopes	Black Spruce 10-30' High and Some Birch	Good	Locally 1' of Peat	18+' of Lacustrine Silt	NB to U/F	NB to U/F	NB to U/F
BR(Df) Glacial Drift Over Bedrock	Moderate to Very Steep Slopes	Dense to Sparse Black Spruce	Good	Silt to 2 Feet	Silt Till	NB to U/F	V 10% to NB to U/F	Unknown
GLB-1(SL) Slopewash Modified Glacial Lake Basin	Gentle Slopes	Sparse to Dense Black Spruce and Willow	Poor	0-4' of Peat	Lacustrine Silt to a Depth of 15+'	V 5-25%	V 5% to U/F	U/F
HM Hummock Moraine - No Borehole Data Available. See Similar Unit Above.								
GLB-1(SL) Slopewash Modified Glacial Lake Basin	Gentle Slopes to Flat	Dense Black Spruce and Birch	Poor	--	Lacustrine Silt	NB to V 5%	U/F to V 5%	U/F
GLB-1(PT) Peat Covered Glacial Lake Basin	Flat to Steep Slopes to East	Dense 15-30' High Black Spruce and Birch	Poor	0-6' of Peat and Organic Soil	Lacustrine Silt and Clay	V up to 75%	NB	NB
673-C-6								

DRAWING No.	SHEET No.	TOTAL SHEETS
	63	



PLAN	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
ALIGNMENT						
TOPOG NOTES						
DRAINAGE						
BORROW AREAS						
STRUCTURES NOTED						

MOSAIC		BY	DATE
FLIGHT No.	FLOWN		
PHOTO No.	INTERPRETATION		
ORIGINAL SCALE	LINE LOCATED IN FIELD		

PROFILE	SURVEYED	DATE	PLOTTED	DATE	CHECKED	DATE
℄ PROFILE						
SOILS						
DESIGN GRADELINE						
DRAINAGE						
STRUCTURES NOTED						

REVISED 20/2/73

TERRAIN LEGEND

Symbol	Terrain Type	Physiographic Features	Materials Description
AFD	Alluvial Fan Deposit	Cone shaped, gently sloping stream outlet	Poorly sorted silt, sand gravel, some cobbles and boulders
AFP	Active Flood Plain	Exposed bars in stream or river channel	Sand and gravel in high energy streams to silt and sand in low energy streams
AMP	Alluvial Meander Plain (Mackenzie River Meander Plain)	Flat plain often with sand dunes on it	Sands and silty sands stratified or channel deposits
AMP-2	Alluvial Meander Plain (excluding the Mackenzie River Plain)	Flood plains filling bottom of the stream or river valley	Fine silt, sand or gravel as channel deposits
BR	Bedrock	Outcrop to continuous ridge	Exposed rock to rock with generally less than 5 feet of cover
DL	Deltaic Sand Plain	At the mouth of a river or creek	Silt topstratum over stratified silty sand and silt with some clay and pebbles
E	Esker	Narrow sharp ridge	Sand and/or gravel with some silt inclusions
FFP	Fossil Flood Plain	Flat plain may be dissected to rolling topography	Silty topstratum over sand and/or gravel of a flood plain of an inactive stream
GLB-1	Glacial Lake Basin (Better drained type)	Lowland occasionally swampy areas	Ice-rich to to medium plastic silty clay, occasionally with a trace of sand
GLB-2	Glacial Lake Basin (thermokarst type)	Lowlands usually swampy with thaw lakes	Usually peat covered glacio-lacustrine silty clay
GM	Ground Moraine (undifferentiated)	Flat to broad gentle slopes	Silt till to clay till usually some sand and gravel
HM	Hummocky Moraine	Large hummocks and short ridges with kettles	Mostly till with some sand and/or silt. Peat overlies silty clays in kettle depression
HT	High Terraces	Tabular bodies along the sides of and above present or abandoned river channels	Silt covered stratified sand and/or gravel of fluvial or outwash origin
K	Kames	Conical hill to short ridge	Complexly stratified sand and/or gravel with minor till or boulders
KT	Kame Terrace	Poorly expressed terraces	Dirty poorly sorted sand and/or gravel to till
LB	Lacustrine Basin	Postglacial ponded deposits in larger lowlying areas	Organic and inorganic clay, silt and fine sand
OW	Outwash Plains or Deltas	Tabular bodies	Sand and/or gravel
RKM	Ridge-and-Knoll Moraine	Drumlinized till plain. Rolling large linear features	Molded basal till low plastic silty-clay till
SD	Sand Dunes	Elongate Ridges to Barchans	Fine to medium sand
TS	Talus Slopes	Steep Slopes	Mainly coarse gravel cobbles and boulders

Surficial Features

AS	Abandoned Strandlines
DR	Drumlinoid forms including flutings and glacial grooves with linear ridges
IWP	Ice Wedge Polygons, usually in ice-rich silt
RG	Rock and Talus glaciers along the Norman Range. Mixed ice and silt to boulders.
RS	Rock Slide to rock avalanche scars on the Norman Range
SK	Sinkholes in soluble bedrock

Topstratum Phases (Associated with Terrain Types)

Df	Thin (0 - 10 feet) of drift over bedrock surface
PT	Mixed bog and fen peats in post glacial ponded depression
SL	Slopewash or solifluction features. Topstratum of ice-rich poorly sorted silty clay and silty sand to gravel
WM	Wave modified, mainly a thin sandy to gravelly washed layer over till

Complexes are shown as combinations of two terrain types with or without phases that pertain to the parent type.

Terrain Symbols are modified from Canadian Gas Arctic Study Limited Terrain Study for this area.

Legend For Mackenzie Highway Mosaic

	Mackenzie Highway
	Borrow Areas
	Access Road to borrow area on pre-existing cutlines
	Cleared access to borrow areas
18	Borrow area number
689-C-4	Borehole number
721	Mileage
RKM	Terrain Outlines

Borrow Profile Legend

G	Gravel	W	Well Graded		Broken Section
S	Sand	P	Poorly Graded		End of Hole
M	Silt	L	Low Plasticity	NS	Not to Scale
C	Clay	I	Intermediate Plasticity	U	Unfrozen
Ls	Limestone	H	High Plasticity	N/A	Not Available
Sh	Shale	PT	Peat	NB)	Standard Ice
Dol	Dolomite	(T)	Till	NF)	Description
Bl	Boulder	(CL)	Low Plasticity Clayey Shale	V)	Symbols
O	Organic Soil	18	Borrow Area Number		