

**GEOTECHNICAL INVESTIGATION**

HIGHWAY CONSTRUCTION  
SHAKWAK PROJECT SEGMENT 18A  
km 1937.2 to km 1949.6  
ALASKA HIGHWAY, Y.T.

CENTRELINE & GRANULAR TESTING

This Data Package prepared for project viewing:

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GEOTECHNICAL INVESTIGATION  
HIGHWAY CONSTRUCTION SHAKWAK PROJECT SEG. 18A  
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CENTRELINE & GRANULAR TESTING

CONTENTS

INTRODUCTION

Investigation notes, classification methods and legends

CENTRELINE TESTING

Subsurface exploration and testing report sheets are provided. The reports for the centreline holes are arranged according to project location, starting at km 1937+225 and increasing to km 1949+433.

1990	TEST HOLES	34 to 52	shown	with	prefix
			107-		
	TEST HOLES	53 to 86	shown	with	prefix
			108-		
	TEST HOLES	139 to 141	shown	with	prefix
			109-		
	TEST HOLES	142 to 179	shown	with	prefix
			110-		
1991	TEST HOLES	1 to 10	shown	with	prefix
			127-		
1992	TEST HOLES	1 to 3	shown	with	prefix
			165-		

GRANULAR TESTING

1992	TEST HOLES	40 to 58	shown	with	prefix
			170-		
	TEST HOLES	58 to 70	shown	with	prefix
			164-		



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## INTRODUCTION

GEOTECHNICAL INVESTIGATION  
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GEOTECHNICAL INVESTIGATION DATA

This geotechnical investigation data is provided to assist in the interpretation of soil conditions encountered within this project area. The data presented was prepared solely for Departmental designing and estimating purposes.

The description of material/soil description shown on the subsurface exploration and test reports is a textural description based on identification of retrieved material by the field drilling technician at the time of investigation. This description may be modified following laboratory testing and classification of selected samples. The system used is based on the ASTM standards for identification and classification of soils. Permafrost classifications and groundwater levels are indicated as detected at time of drilling, unless otherwise noted. Changes in moisture or frost conditions should be anticipated depending on the season, time lapse or amount of development work done since the date of investigation.

The sample identification and laboratory testing data is provided to give detailed physical properties of selected retrieved samples within the subsurface profile. These tests may be conducted on disturbed samples and may exhibit properties different from the native materials. The sample classification may also vary from the soil description due to variations within the sampled strata or because of changes resulting from the sampling method or excavation equipment used.

These descriptions are not intended to be conclusive as to the nature of any material encountered, or to conditions between or around the test borings/pits.

It is recommended that a site inspection, combined with consideration of the regional geology and climatic conditions be conducted. An evaluation of the investigation methods and development work done since the time of investigation should be done prior to interpreting the subsurface conditions for construction purposes.

# UNIFIED SOIL CLASSIFICATION

MAJOR DIVISIONS		GROUP SYMBOLS	TYPICAL NAMES	CLASSIFICATION CRITERIA	
COARSE-GRAINED SOILS More than 50% retained on No. 200 sieve*	GRAVELS 50% or more of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS	GW	Well-graded gravels and gravel-sand mixtures, little or no fines	$C_u = D_{60}/D_{10}$ Greater than 4 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3  Not meeting both criteria for GW  Atterberg limits plot below 'A' line or plasticity index less than 4  Atterberg limits plot above 'A' line and plasticity index greater than 7  Atterberg limits plotting in hatched area are borderline classifications requiring use of dual symbols
		GRAVELS WITH FINES	GP	Poorly-graded gravels and gravel-sand mixtures, little or no fines	
		SANDS WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures	
		SANDS	GC	Clayey gravels, gravel-sand clay mixtures	
	SANDS More than 50% of coarse fraction passes No. 4 sieve	CLEAN SANDS	SW	Well-graded sands and gravelly sands, little or no fines	$C_u = D_{60}/D_{10}$ Greater than 6 $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3  Not meeting both criteria for SW  Atterberg limits plot below 'A' line or plasticity index less than 4  Atterberg limits plotting in hatched area are borderline classifications requiring use of dual symbols
		SANDS WITH FINES	SP	Poorly-graded sands and gravelly sands, little or no fines	
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures	
		SANDS WITH FINES	SC	Clayey sands, sand-clay mixtures	
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures	
		SANDS WITH FINES	SC	Clayey sands, sand-clay mixtures	
FINE-GRAINED SOILS 50% or more passes No. 200 sieve*	SILTS AND CLAYS Liquid limit 50% or less	ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands	<div style="text-align: center;"> <b>PLASTICITY CHART</b>                      For classification of fine-grained soils and fine fraction of coarse-grained soils                      Atterberg limits plotting in hatched area are borderline classifications requiring use of dual symbols                      Equation of 'A' line: <math>PI = 0.73(LL - 20)</math> </div>	
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays		
		OL	Organic silts and organic silty clays of low plasticity		
	SILTS AND CLAYS Liquid limit greater than 50%	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts		
		CH	Inorganic clay of high plasticity, fat clays		
		OH	Organic clays of medium to high plasticity		
		OH	Organic clays of medium to high plasticity		
	SILTS AND CLAYS	PT	Peat, muck and other highly organic soils		*Based on the material passing the 3 in. (75 mm) sieve †ASTM Designation D 2487, for identification procedure see D 2488

## GROUND ICE DESCRIPTION

### ICE NOT VISIBLE

GROUP SYMBOLS	SYMBOLS	SUBGROUP DESCRIPTION	
N	Nf	Poorly-bonded or friable	
	Nbn	No excess ice, well-bonded	
	Nbe	Excess ice, well-bonded	

### VISIBLE ICE LESS THAN 50% BY VOLUME

GROUP SYMBOLS	SYMBOLS	SUBGROUP DESCRIPTION	
V	Vx	Individual ice crystals or inclusions	
	Vc	Ice coatings on particles	
	Vr	Random or irregularly oriented ice formations	
	Vs	Stratified or distinctly oriented ice formations	

### VISIBLE ICE GREATER THAN 50% BY VOLUME

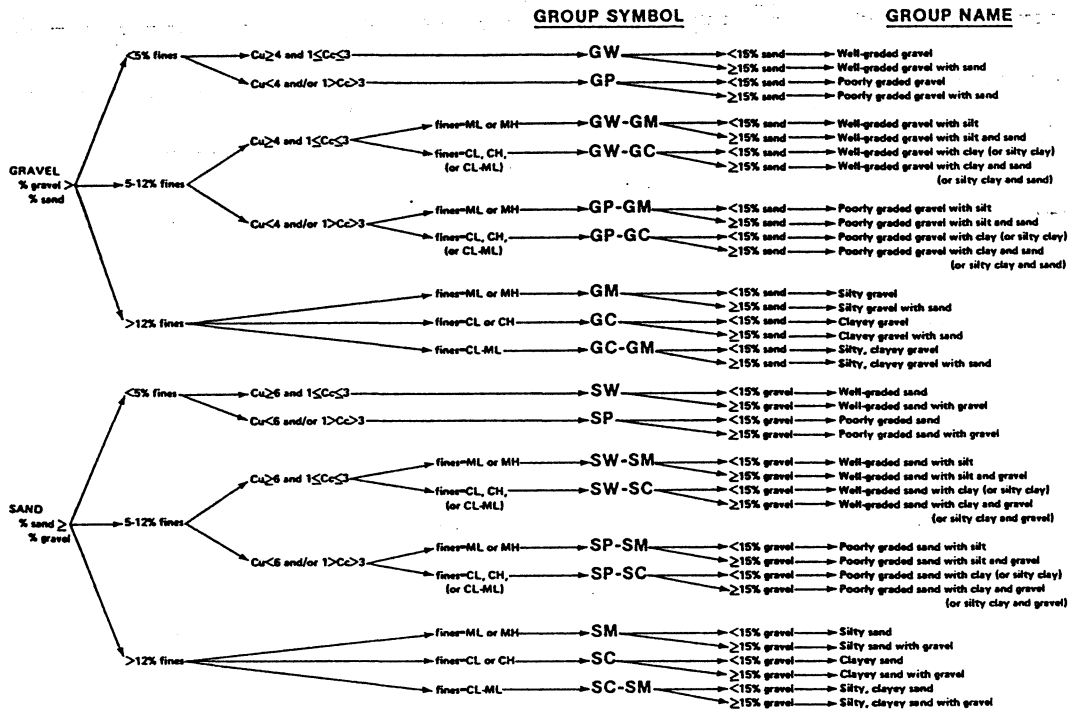
GROUP SYMBOLS	SYMBOLS	SUBGROUP DESCRIPTION	
ICE	ICE + Soil Type	Ice with soil inclusions	
	ICE	Ice without soil inclusions (greater than 25 mm (1 in.) thick)	

**NOTE:**

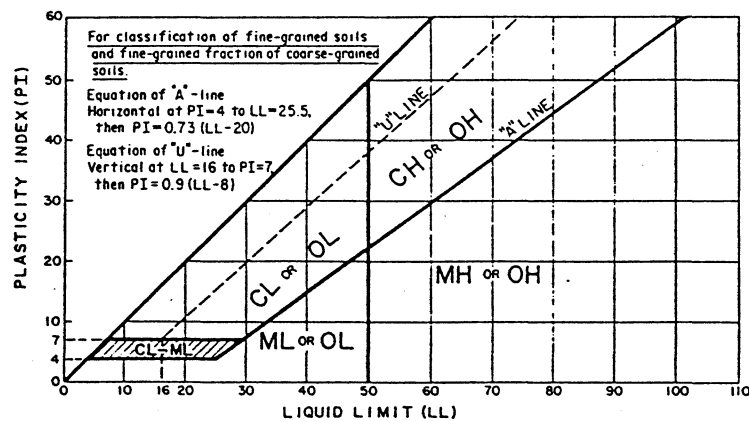
1. Dual symbols are used to indicate borderline or mixed ice classifications
2. Visual estimates of ice contents indicated on borehole logs  $\pm 5\%$
3. This system of ground ice description has been modified from NRC Technical Memo 79, Guide to the Field Description of Permafrost for Engineering Purposes

**LEGEND**

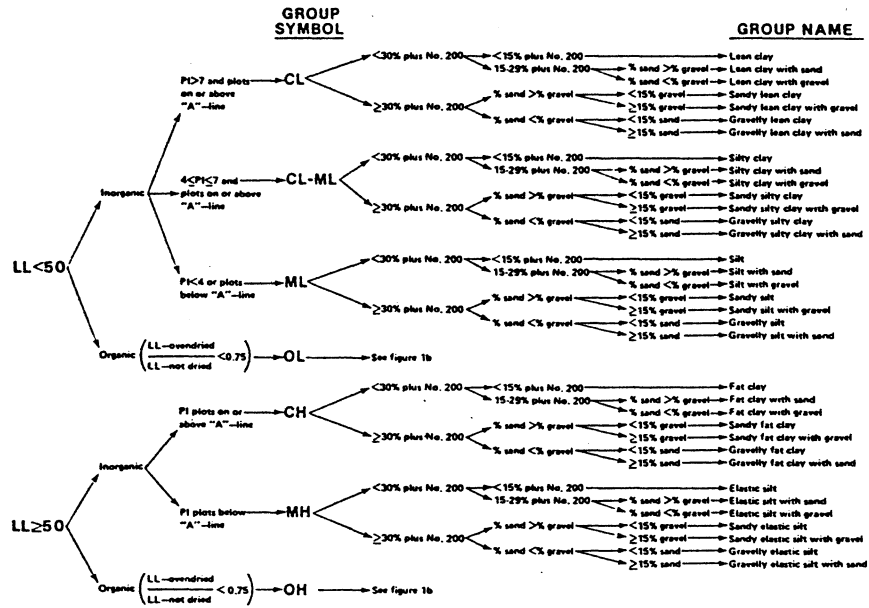
Soil Ice



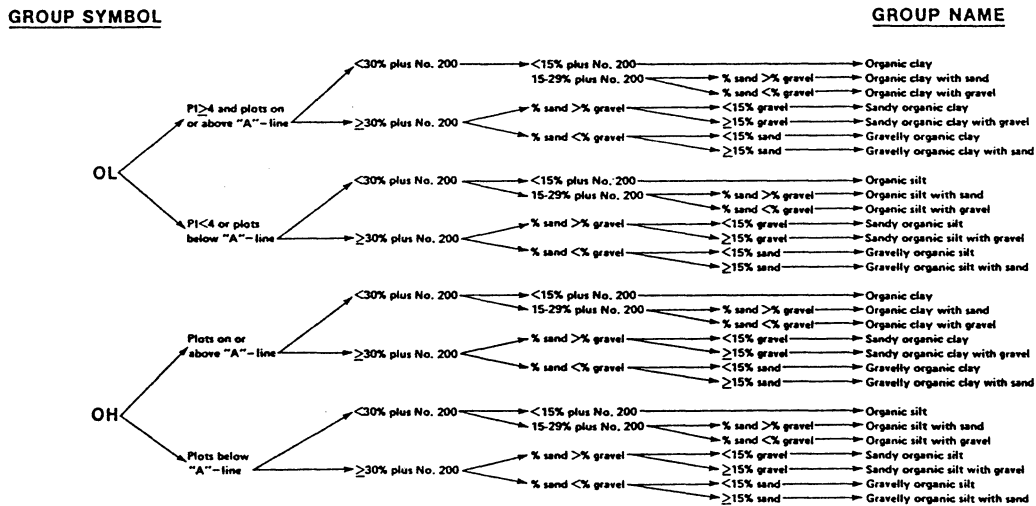
Flow chart for classifying coarse-grained soil.



Plasticity chart.



Flow chart for classifying fine-grained soil.



Flow chart for classifying organic soil.



SUBSURFACE EXPLORATION AND TESTING REPORT

LEGEND

DEPTH (m.)	DESCRIPTION OF MATERIAL	SAMPLE DATA							STD. PENETRATION BLOWS/300mm	0 - % MOISTURE CONTENT X - % < .074mm  PLASTIC LIMIT — LIQUID LIMIT
		PERMAFROST CLASS. or G.W.L.	SAMPLE TYPE	FIELD No.	LAB No.	UNIFIED CLASSIFICATION	% GRAVEL	% SAND		
1	INTERPRETED SOIL DESCRIPTION FROM TEST RESULTS AND FIELD DESCRIPTIONS									
2	A SOLID LINE BETWEEN TYPES INDICATES DEPTH OF CHANGE									
3	A DASHED LINE INDICATES PROBABLE DEPTH OF CHANGE OR A GRADATIONAL CHANGE									
4										
5										
6										
7										
8										

Depth limits from which  
sample obtained

N.P. - Indicates  
that sample was  
non plastic.

Standard Penetration  
Test Results. Entered  
as blows per 300 mm.

Percentages of each size of  
material. A - indicates  
not tested.

Unified classification of sample.

Sample identification numbers.

Sample collection method and shipping container  
type as per letter symbols below.

Limits and type of permafrost using N.R.C.  
classification.

LEGEND

Hole Type

- AD - Auger Drill
- RD - Rotary Drill
- DD - Diamond Drill
- TP - Test Pit
- NF - Natural Face
- EF - Excavation Face

Sample Method

- A - Auger
- B - Bulk
- C - Core Bbl.
- R - Return (wash or air)
- S - Split Spoon
- T - Shelby Tube
- U -

Sample Container

- J - Glass Jar
- K - In Tube
- M - Moisture Tin
- N - Cloth Bag
- P - Plastic Bag
- W - Waxes
- X - Discarded

e - estimated

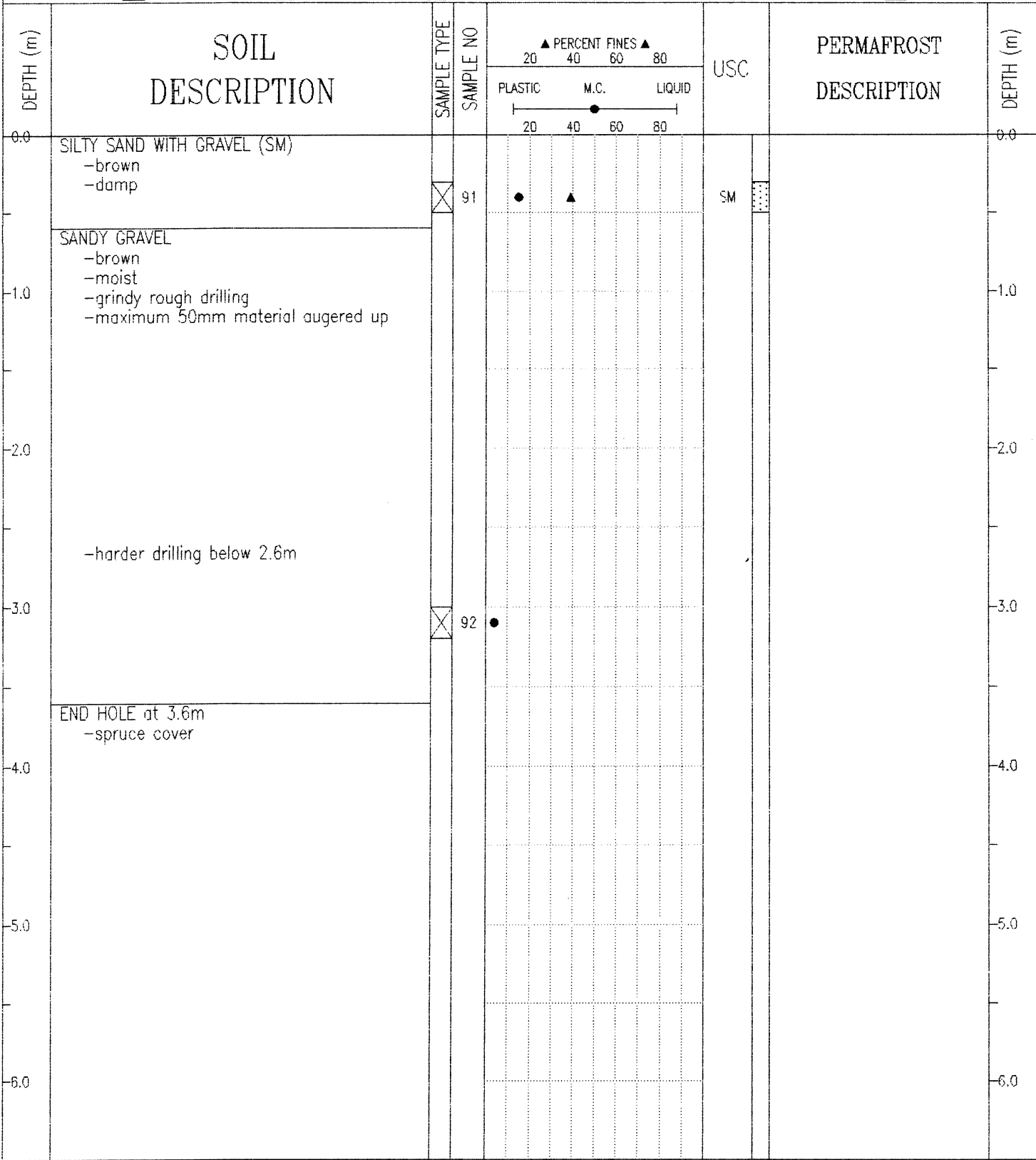
M/A - Not Applicable



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## **CENTRELINE TESTING**

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-34
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1937+225 o/s 9m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



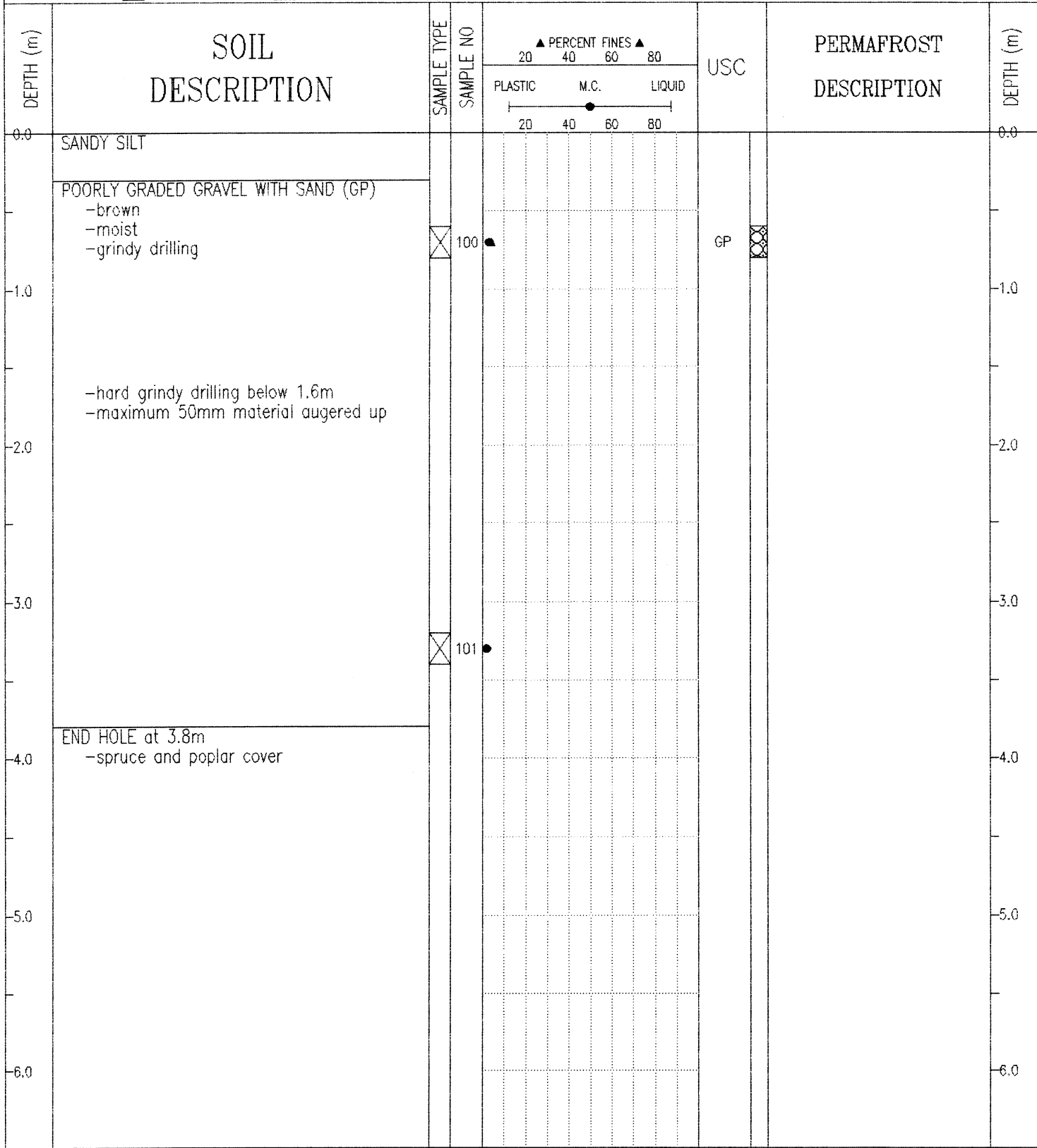
SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		BOREHOLE No. 107-35				
SHAKWAK PROJECT		A/H KM 1931.9-1965.5		Project No: SEGMENT 18				
DRILL: B61 150mm Dia. SOLID STEM AUGER		LOCATION: STA 1937+375		ELEVATION 0.000 (m)				
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲		USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.			
0.0	ORGANIC MATERIAL			20	40	60	80	0.0
	SILTY GRAVEL WITH SAND (GM) -brown -wet	<input checked="" type="checkbox"/>	93	●	▲			
-1.0	GRAVELLY SAND -brown -moist -grindy drilling -maximum 50mm material augered up							-1.0
-2.0	-first refusal at 2.0m							-2.0
-3.0		<input checked="" type="checkbox"/>	94	●				-3.0
-4.0	END HOLE at 3.8m -spruce cover							-4.0
-5.0								-5.0
-6.0								-6.0
Public Works Canada Whitehorse, Yukon Territory.				COMPLETION DEPTH 3.8 m		COMPLETE 90/10/03		
				LOGGED BY JM		DWG NO.		Page 1 of 1



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-37
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1938+000 o/s 4m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	SILTY GRAVEL WITH SAND (GM) -moist								0.0
0.8		<input checked="" type="checkbox"/>	98	● ▲			GM		
1.0	GRAVELLY SAND -moist -grindy drilling -maximum 50mm material augered up								1.0
2.2									
2.8	SANDY GRAVEL -brown -moist -hard rough grindy drilling -maximum 50mm material augered up								2.8
3.0		<input checked="" type="checkbox"/>	99	●					3.0
3.8	END HOLE at 3.8m -spruce cover								3.8
4.0									4.0
5.0									5.0
6.0									6.0

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-38
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1938+150 o/s 3m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-39
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1938+300 o/s 3m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

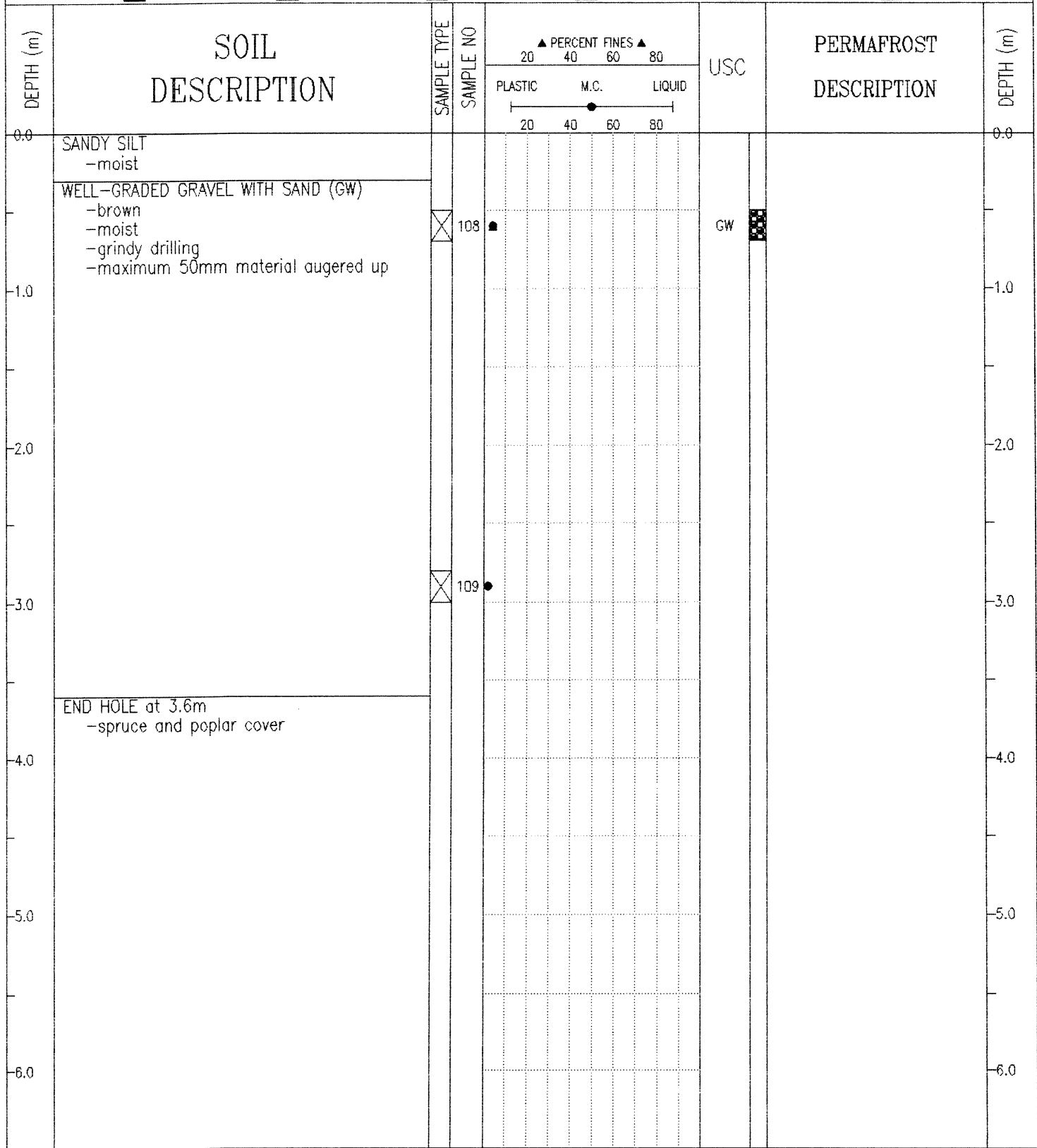
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	CLAYEY GRAVEL							0.0	
	POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM) -brown -moist -grindy drilling -maximum 50mm material augered up	<input checked="" type="checkbox"/>	102				GP-GM		
-1.0								-1.0	
-2.0								-2.0	
-3.0		<input checked="" type="checkbox"/>	103					-3.0	
-4.0	END HOLE at 3.7m -spruce and poplar cover							-4.0	
-5.0								-5.0	
-6.0								-6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-40
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1938+450 o/s 3m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	CLAYEY GRAVEL -old road fill								0.0
	WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM) -brown -moist -grindy drilling -maximum 50mm material augered up	<input checked="" type="checkbox"/>	104				CW-GM		
-1.0									-1.0
-2.0									-2.0
-3.0		<input checked="" type="checkbox"/>	105						-3.0
-4.0	END HOLE at 3.6m -spruce and poplar cover								-4.0
-5.0									-5.0
-6.0									-6.0

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		BOREHOLE No. 107-41				
SHAKWAK PROJECT		A/H KM 1931.9-1965.5		Project No: SEGMENT 1B				
DRILL: B61 150mm Dia. SOLID STEM AUGER		LOCATION: STA 1938+600 o/s 3m Lt.		ELEVATION 0.000 (m)				
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲		USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.			
0.0	SANDY SILT -brown -damp			20	40	60	80	0.0
-1.0	WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM) -brown -moist -grindy drilling	<input checked="" type="checkbox"/>	106					-1.0
-2.0								-2.0
-3.0	-rough grindy drilling below 2.2m -maximum 75mm material augered up							-3.0
-4.0	END HOLE at 3.6m -spruce and poplar cover	<input checked="" type="checkbox"/>	107					-4.0
-5.0								-5.0
-6.0								-6.0
Public Works Canada Whitehorse, Yukon Territory.				COMPLETION DEPTH 3.6 m		COMPLETE 9D/10/03		
				LOGGED BY JM		DWG NO.		Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-42
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1938+750 o/s 3m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-43
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1938+900 o/s 5m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

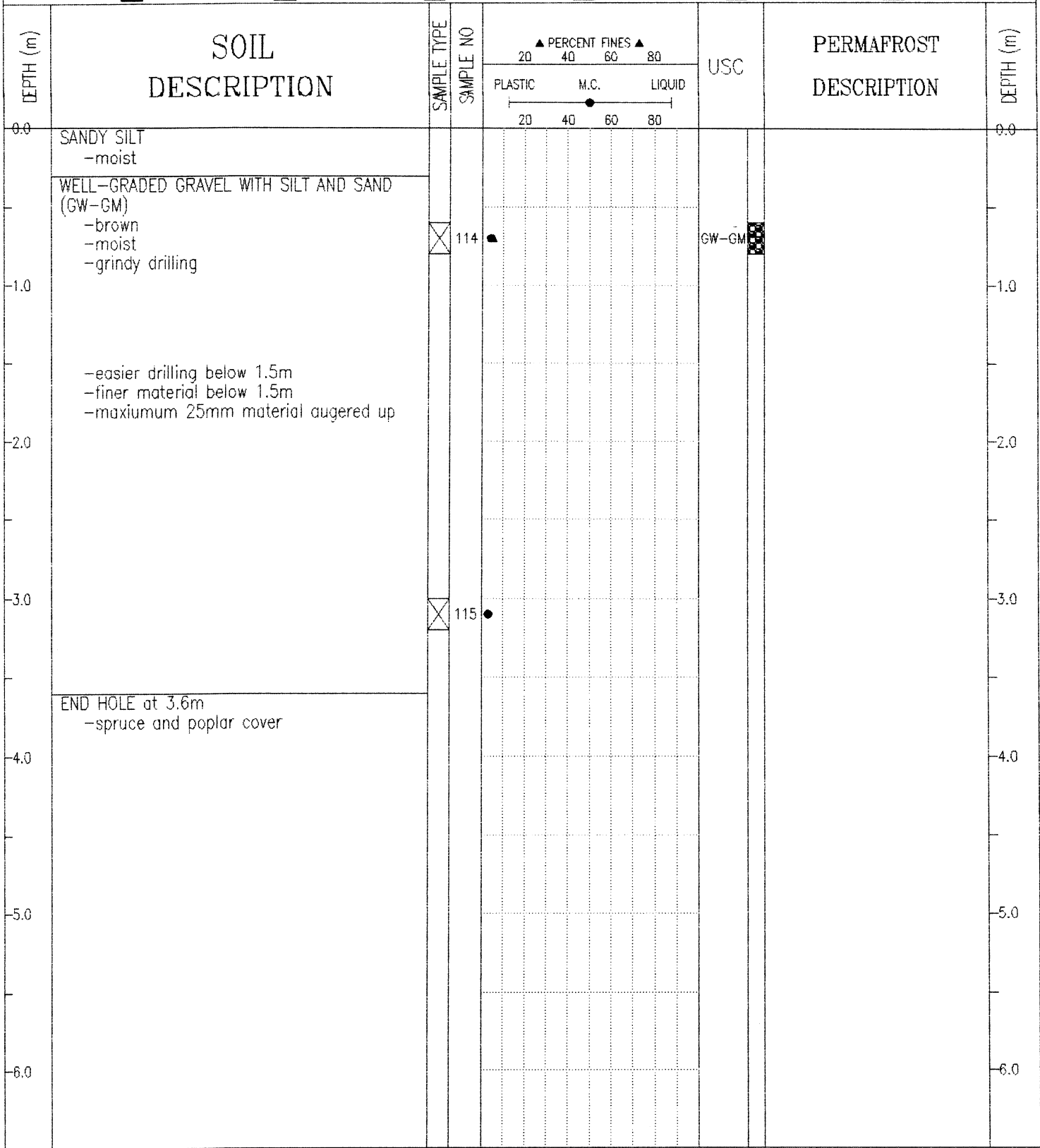
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	SANDY SILT -moist							0.0	
0.0 - 1.0	POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM) -brown -moist -rough grindy drilling -maximum 50mm material augered up	<input checked="" type="checkbox"/>	110				GP-GM <input checked="" type="checkbox"/>	1.0	
1.0 - 3.0								2.0	
3.0 - 3.6		<input checked="" type="checkbox"/>	111					3.0	
3.6 - 4.0	END HOLE at 3.6m -spruce and poplar cover							4.0	
4.0 - 6.0								5.0	
								6.0	

Public Works Canada Whitehorse, Yukon Territory.	COMPLETION DEPTH 3.6 m	COMPLETE 90/10/03
	LOGGED BY JM	DWG NO.

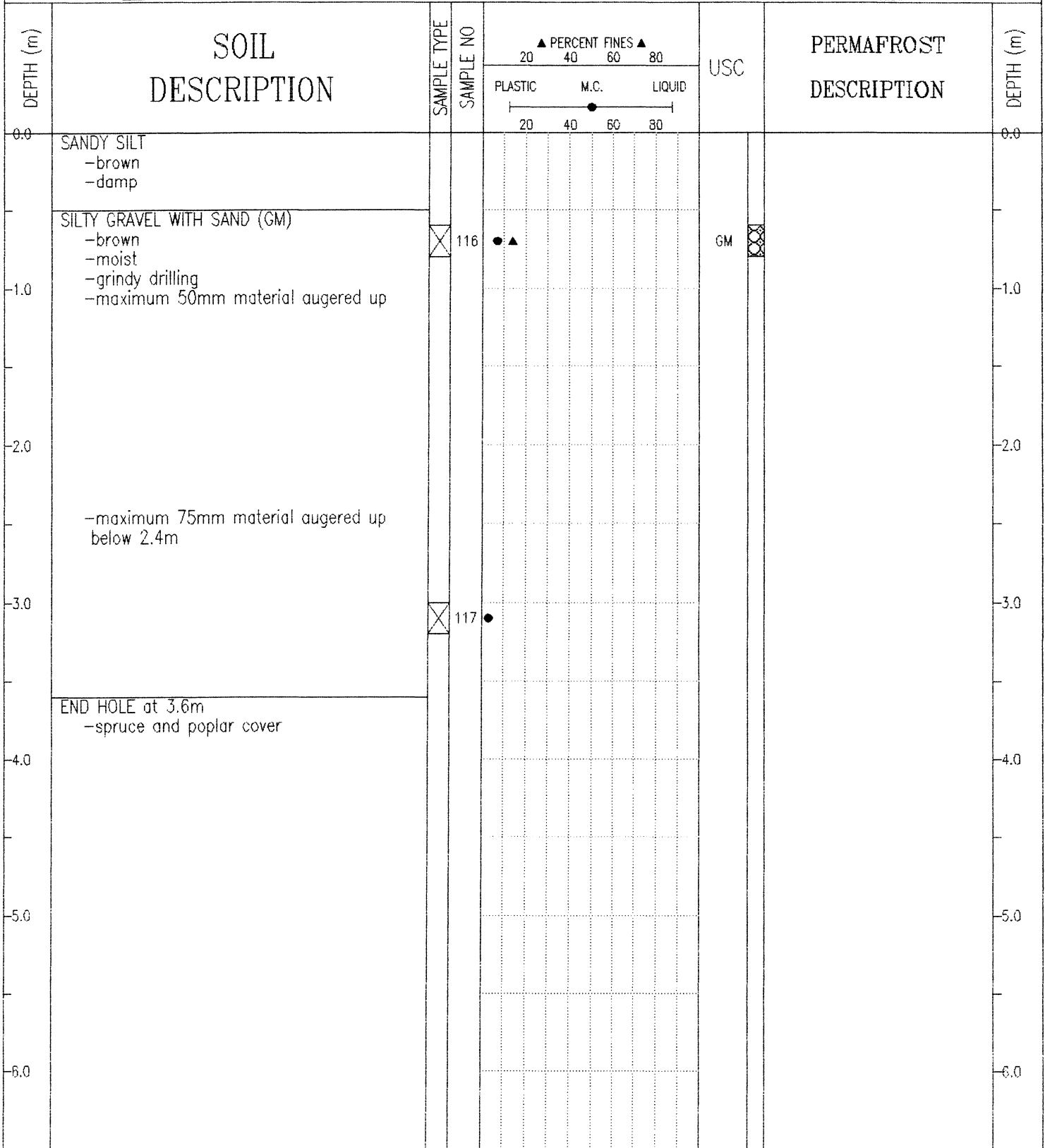
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-44
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1939+050 o/s 5m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	SANDY SILT -moist								0.0
0.0 - 1.0	WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM) -brown -moist -grindy drilling -maximum 50mm material augered up	<input checked="" type="checkbox"/>	112				GW-GM		1.0
1.0 - 3.6		<input checked="" type="checkbox"/>	113						3.0
3.6 - 4.0	END HOLE at 3.6m -spruce and poplar cover								4.0
4.0 - 6.0									6.0

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-45
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1939+200 o/s 5m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

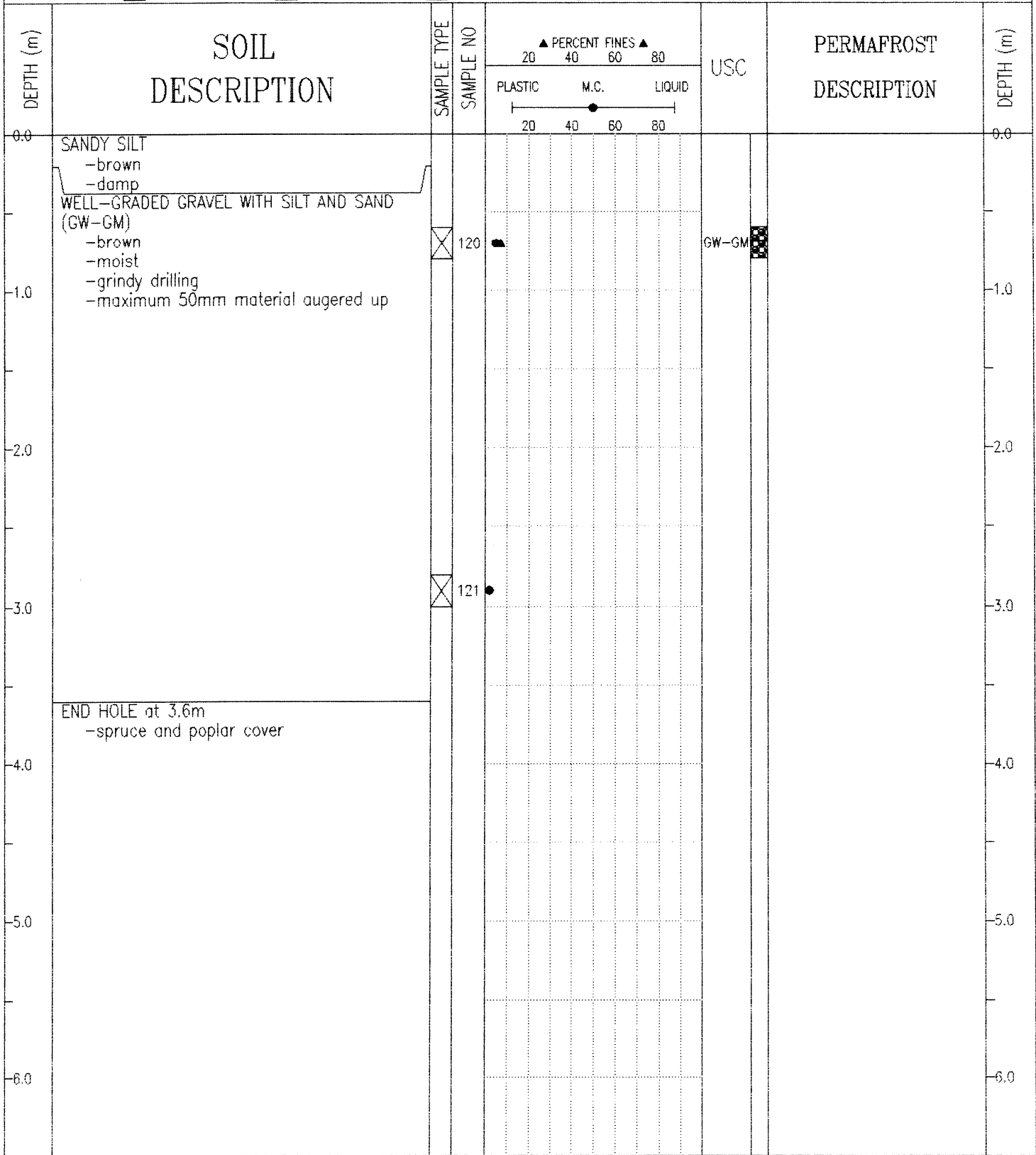


SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-46
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1939+350 o/s 3m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

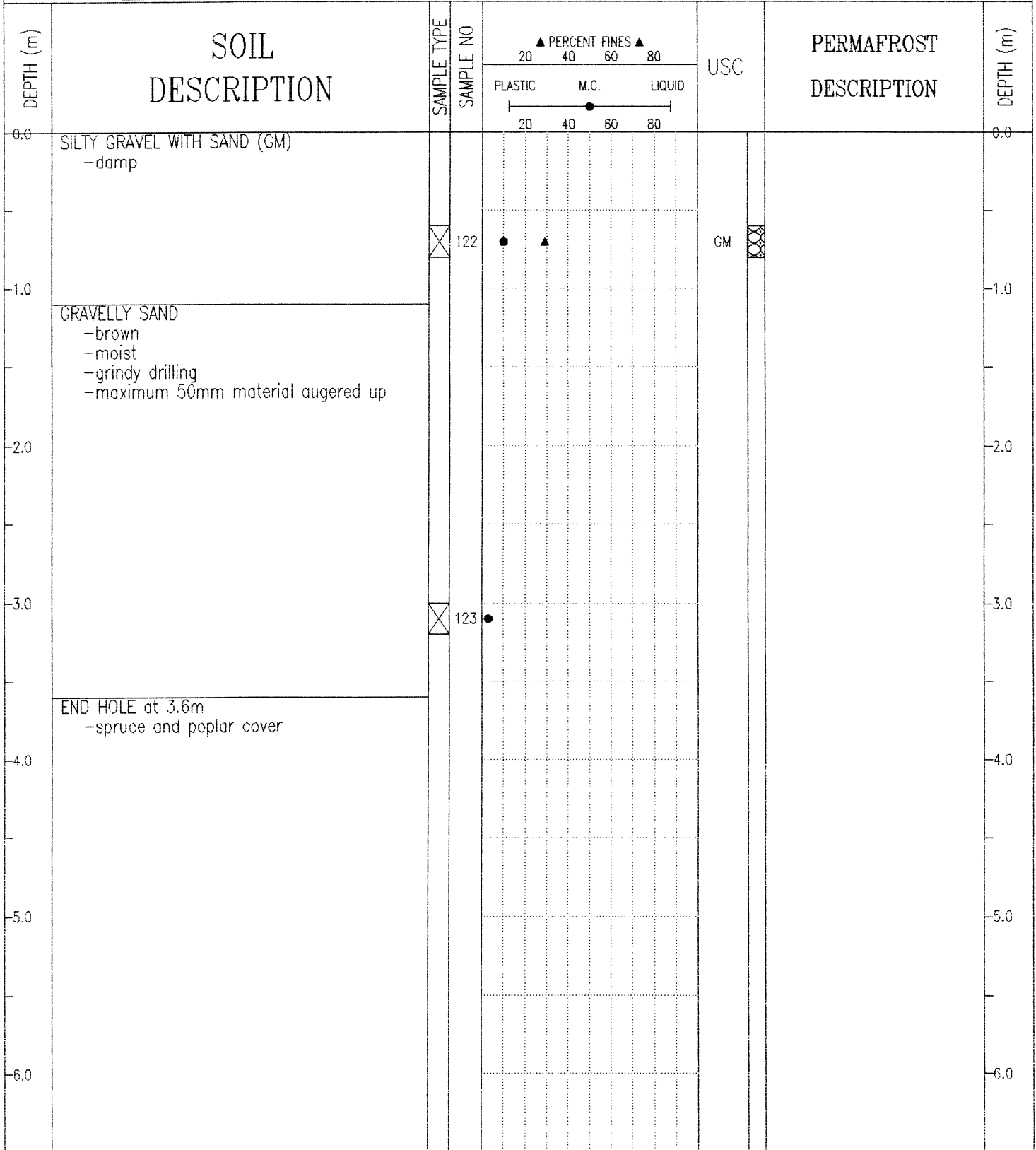


SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		BOREHOLE No. 107-47				
SHAKWAK PROJECT		A/H KM 1931.9-1965.5		Project No: SEGMENT 18				
DRILL: B61 150mm Dia. SOLID STEM AUGER		LOCATION: STA 1939+500 o/s 3m Rt.		ELEVATION 0.000 (m)				
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN		<input checked="" type="checkbox"/> S.P.T.		<input checked="" type="checkbox"/> AUGER				
		<input type="checkbox"/> BULK		<input type="checkbox"/> TUBE				
				<input type="checkbox"/> CORE				
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲		USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.			
0.0	GRAVELLY SANDY SILT -damp			20	40	60	80	0.0
0.0	POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM) -brown -moist -grindy drilling -maximum 50mm material augered up	<input checked="" type="checkbox"/>	118					0.0
1.0								1.0
2.0								2.0
3.0		<input checked="" type="checkbox"/>	119					3.0
3.6	END HOLE at 3.6m -spruce and poplar cover							3.6
4.0								4.0
5.0								5.0
6.0								6.0
Public Works Canada Whitehorse, Yukon Territory.				COMPLETION DEPTH 3.6 m		COMPLETE 90/10/04		
				LOGGED BY JM		DWG NO.		Page 1 of 1

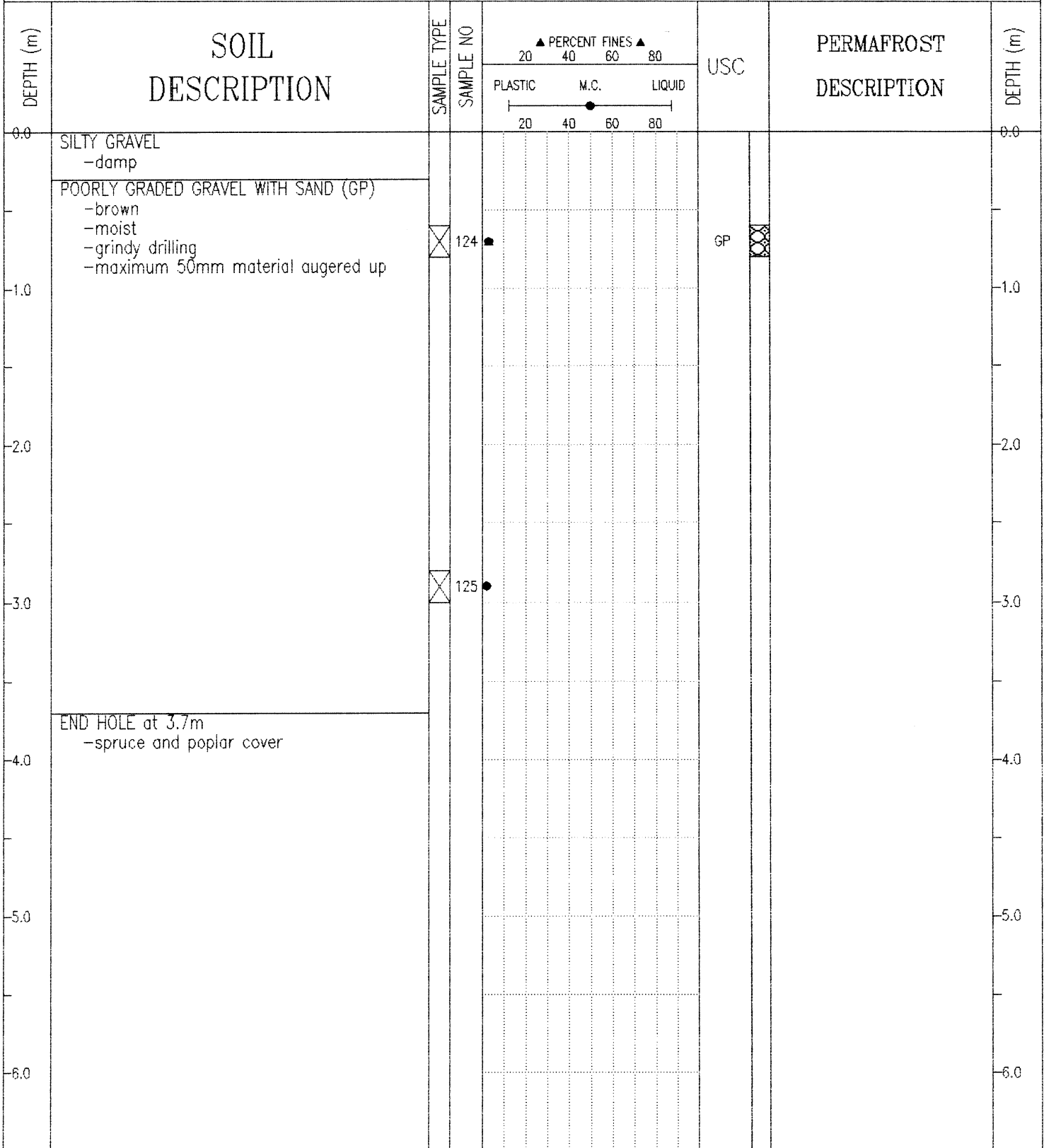
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-48
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1939+650 o/s 3m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-49
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1939+800 c/s 3m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



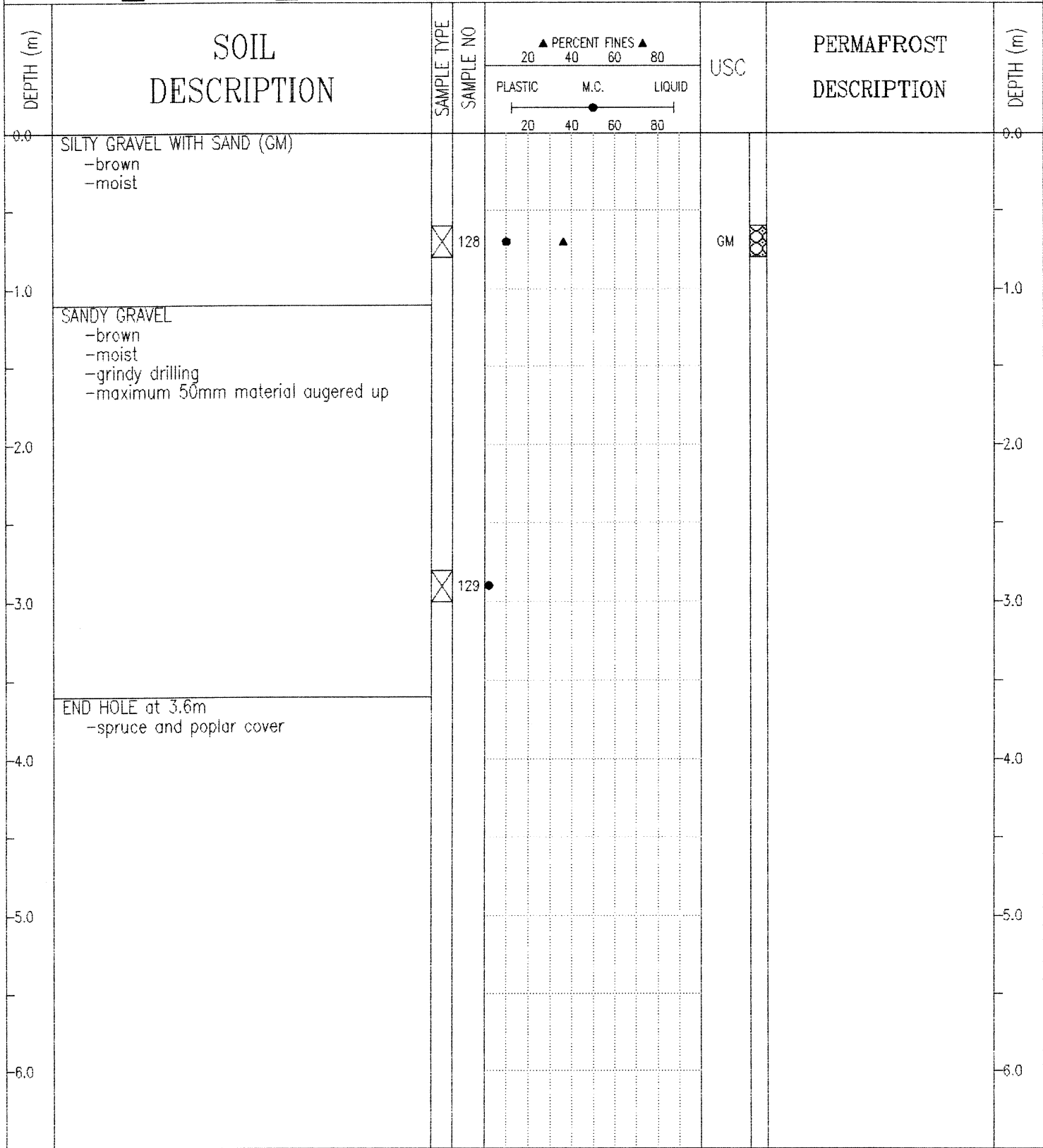
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-50
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1939+950 o/s 3m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-51
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1940+100 o/s 3m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	SILTY GRAVEL							0.0	
0.0 - 1.0	WELL-GRADED GRAVEL WITH SAND (GW) -brown -moist -grindy drilling -maximum 50mm material augered up	<input checked="" type="checkbox"/>	126				GW	0.0 - 1.0	
1.0 - 3.0								1.0 - 3.0	
3.0 - 3.6		<input checked="" type="checkbox"/>	127					3.0 - 3.6	
3.6 - 6.0	END HOLE at 3.6m -spruce and poplar cover							3.6 - 6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 107-52
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1940+250 o/s 4m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-53
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1940+400 o/s 4m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	SILT WITH SAND (ML) -damp  -saturated below 0.5m								0.0
1.0	SILTY GRAVELLY SAND -brown -moist -grindy drilling	<input checked="" type="checkbox"/>	130	●		▲	ML		1.0
2.0	GRAVELLY SAND -brown -moist -maximum 50mm material augered up								2.0
3.0		<input checked="" type="checkbox"/>	131	●					3.0
4.0	END HOLE at 3.6m -spruce and poplar cover								4.0
5.0									5.0
6.0									6.0

Public Works Canada  
Whitehorse, Yukon Territory.

COMPLETION DEPTH 3.6 m

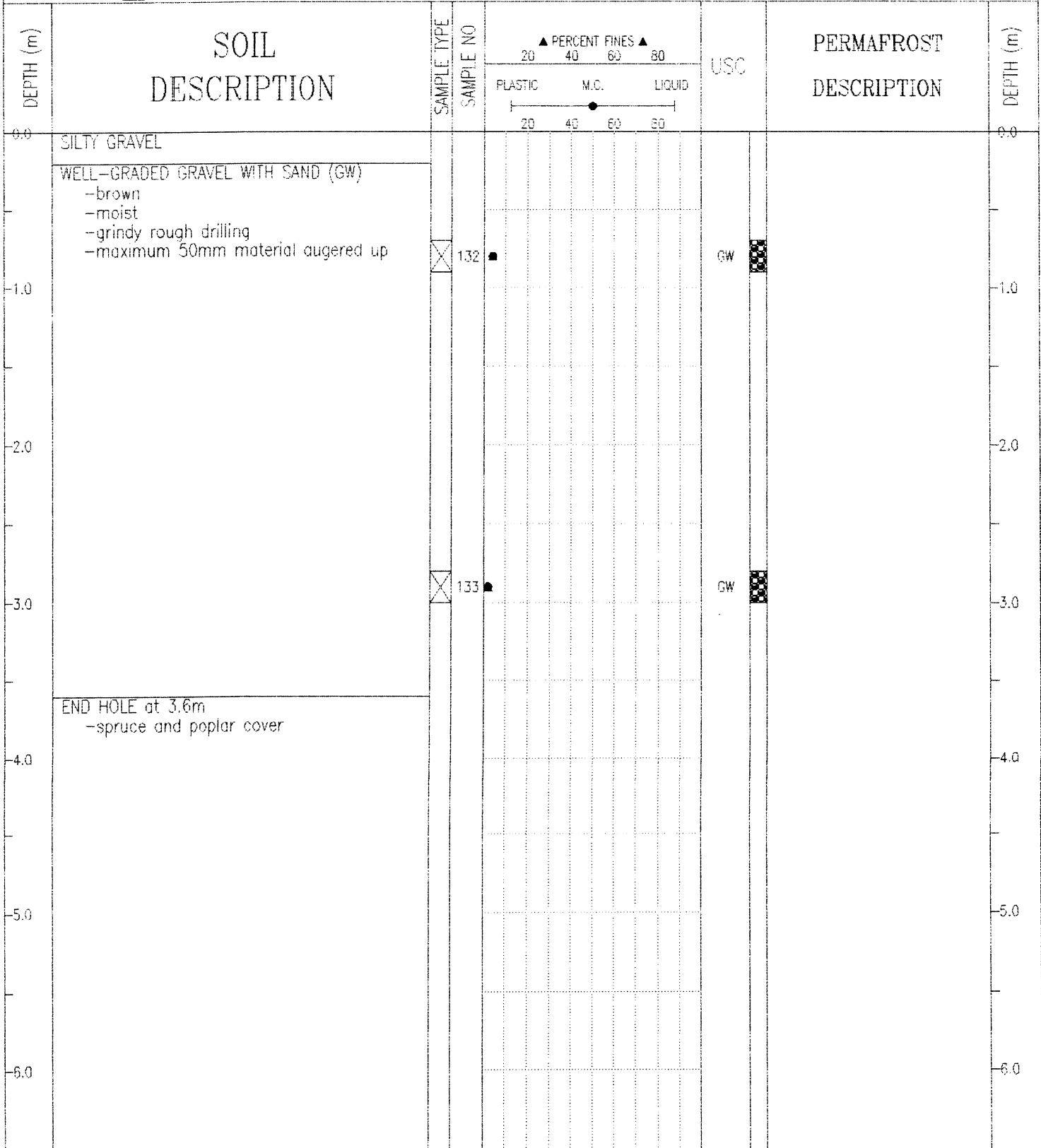
COMPLETE 90/10/04

LOGGED BY JM

DWG NO.

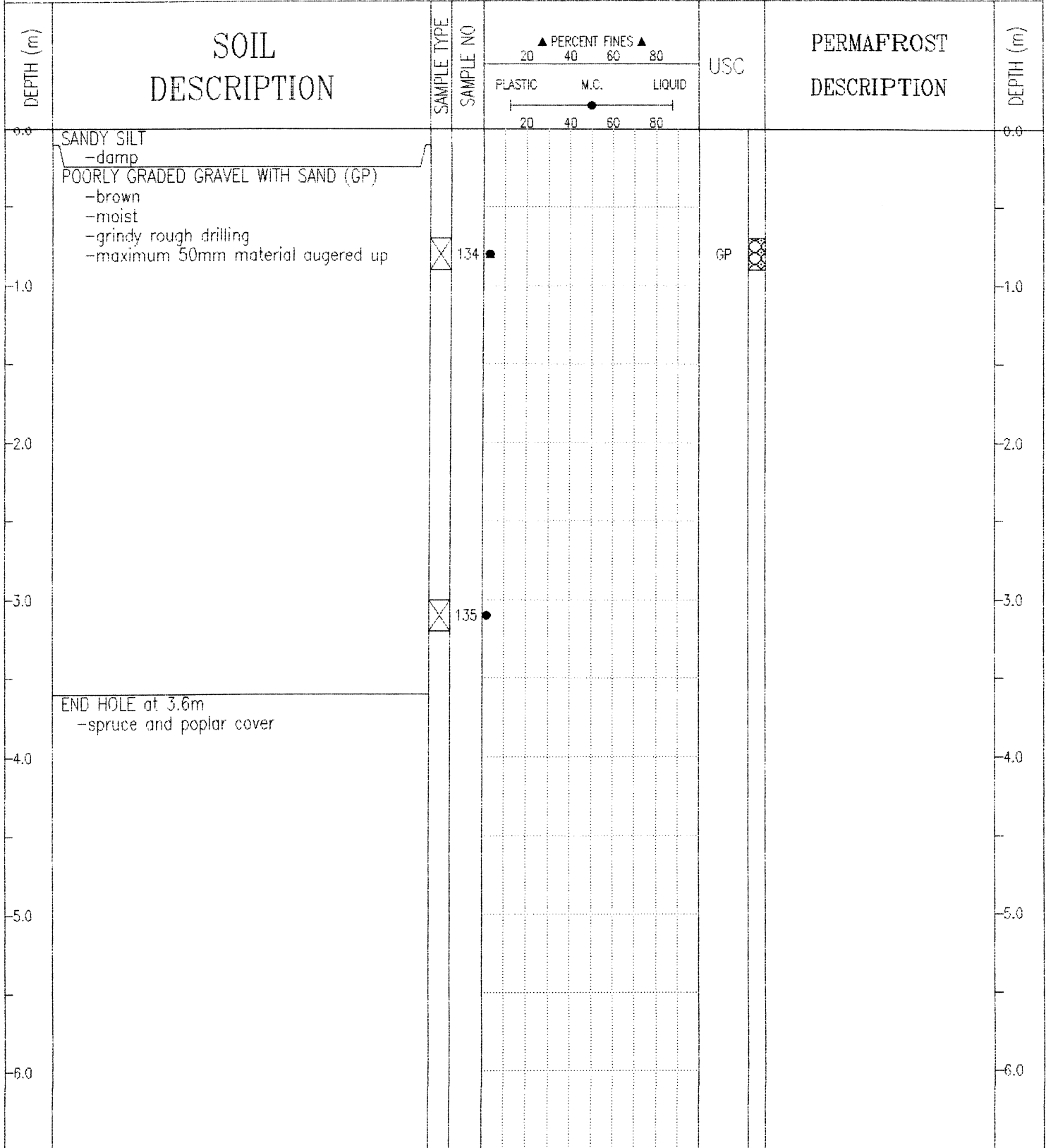
Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-54
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1940+550 o/s 4m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



Public Works Canada Whitehorse, Yukon Territory.	COMPLETION DEPTH 3.6 m	COMPLETE 90/10/04
	LOGGED BY JM	DWG NO.

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-55
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1940+700 e/s 4m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

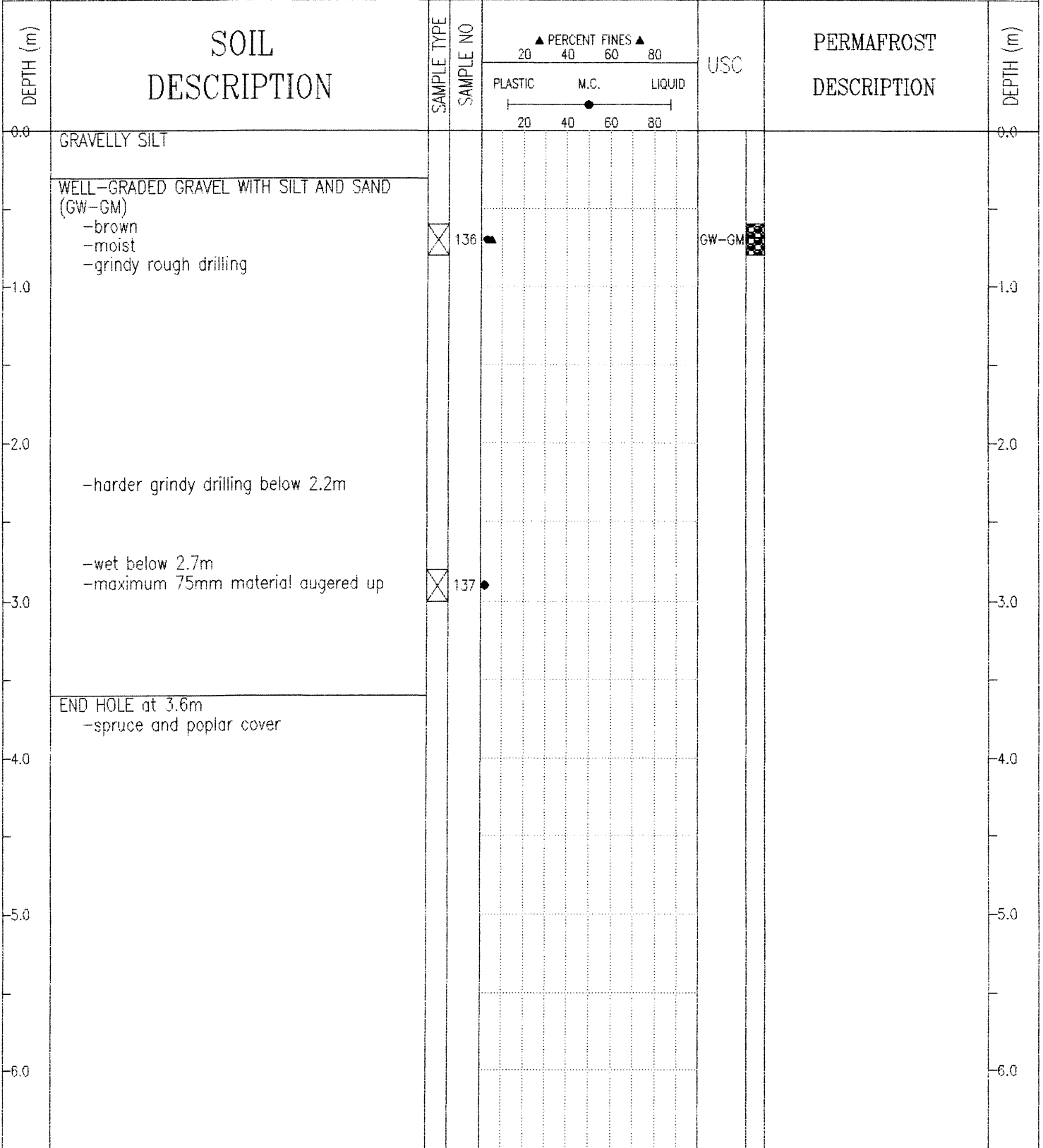


SUBSURFACE EXPLORATION AND TEST REPORT ALASKA HIGHWAY PRE-ENGINEERING BOREHOLE No. 108-56

SHAKWAK PROJECT A/H KM 1931.9-1965.5 Project No: SEGMENT 18

DRILL: B61 150mm Dia. SOLID STEM AUGER LOCATION: STA 1940+850 o/s 4m Rt. ELEVATION 0.000 (m)

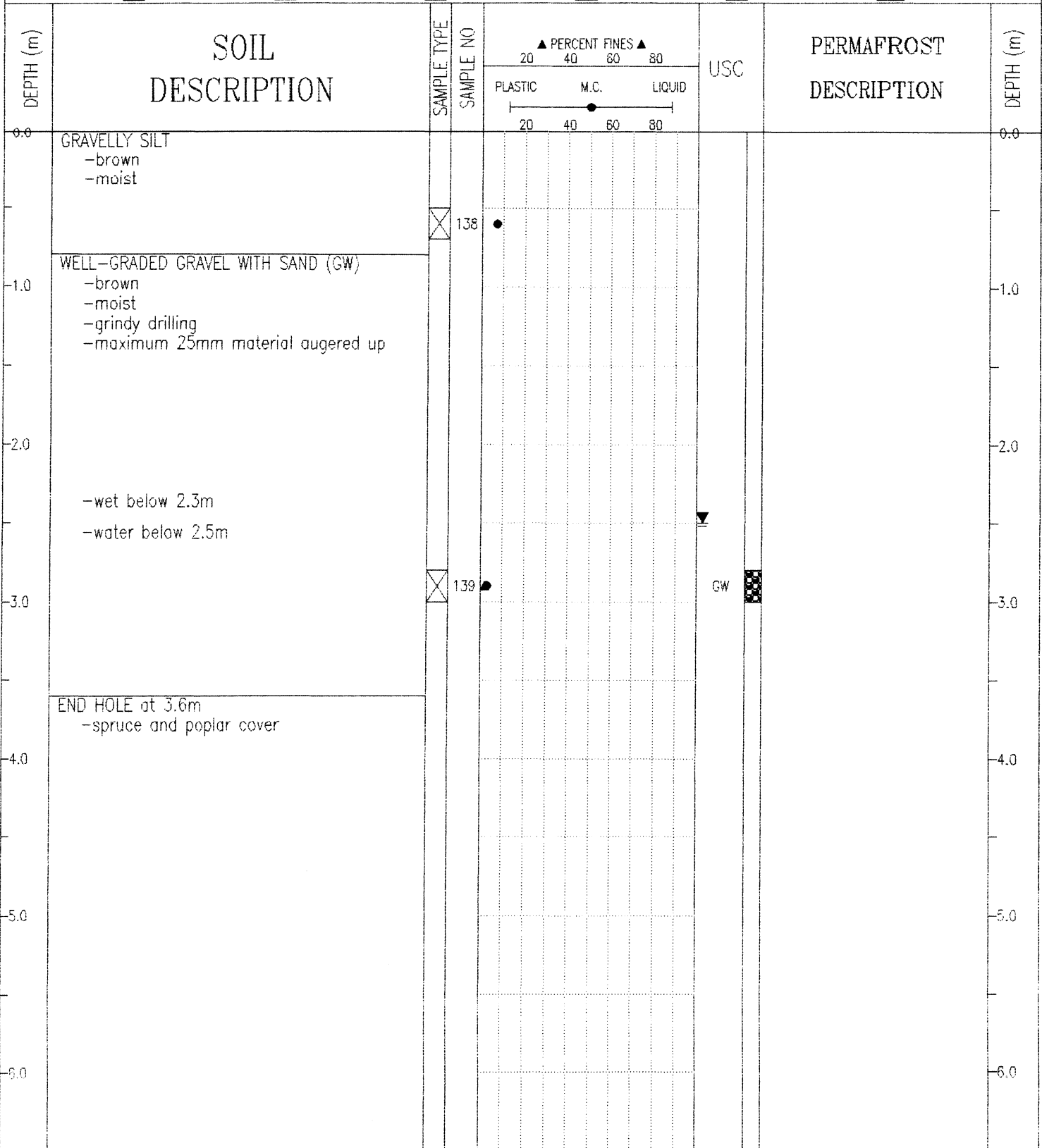
SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



Public Works Canada  
Whitehorse, Yukon Territory.

COMPLETION DEPTH 3.6 m COMPLETE 90/10/04  
 LOGGED BY JM DWG NO. Page 1 of 1

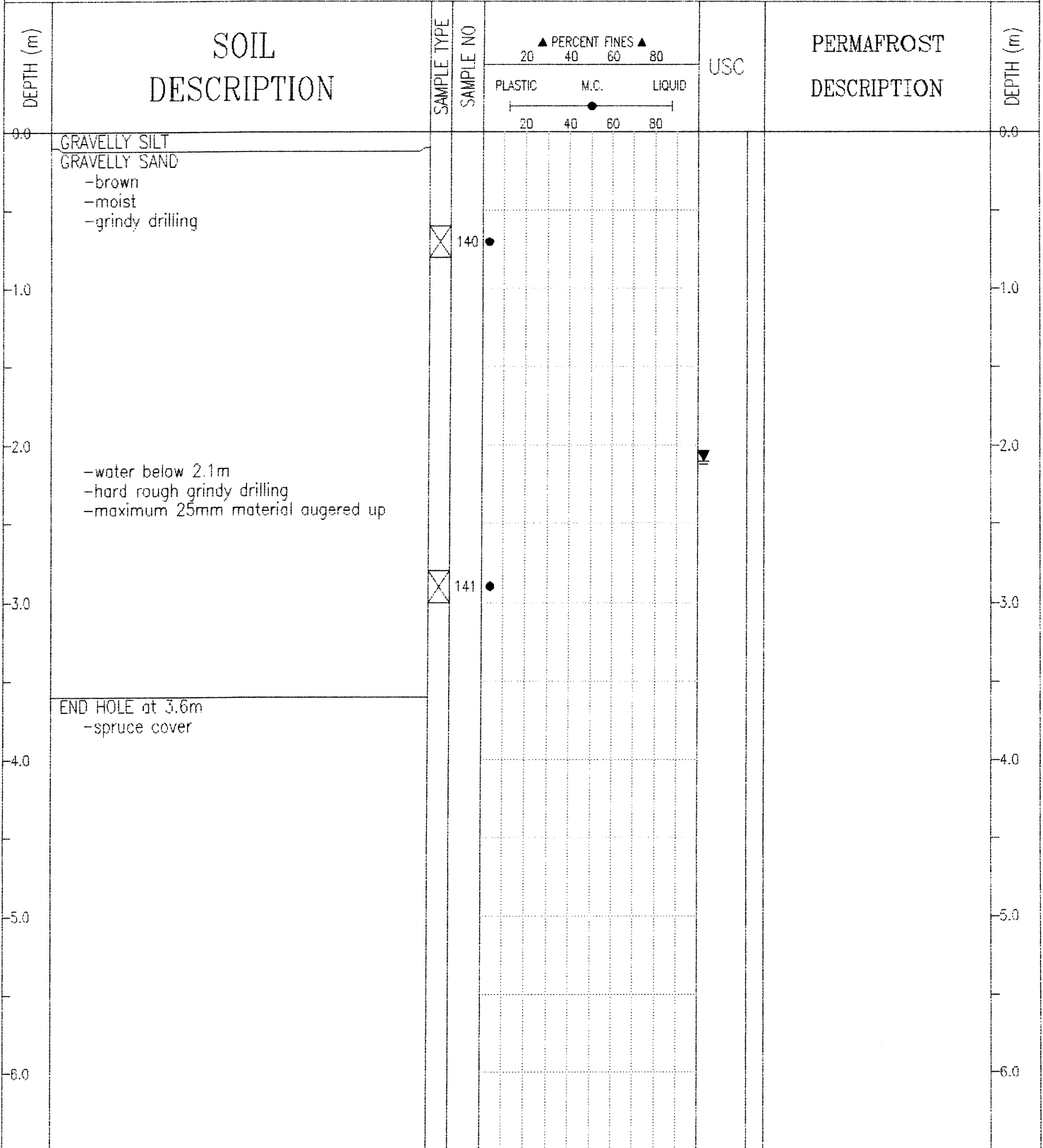
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-57
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1941+000 o/s 5m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



Public Works Canada  
Whitehorse, Yukon Territory.

COMPLETION DEPTH 3.6 m	COMPLETE 90/10/04
LOGGED BY JM	DWG NO.
	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-58
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1941+150 o/s 5m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

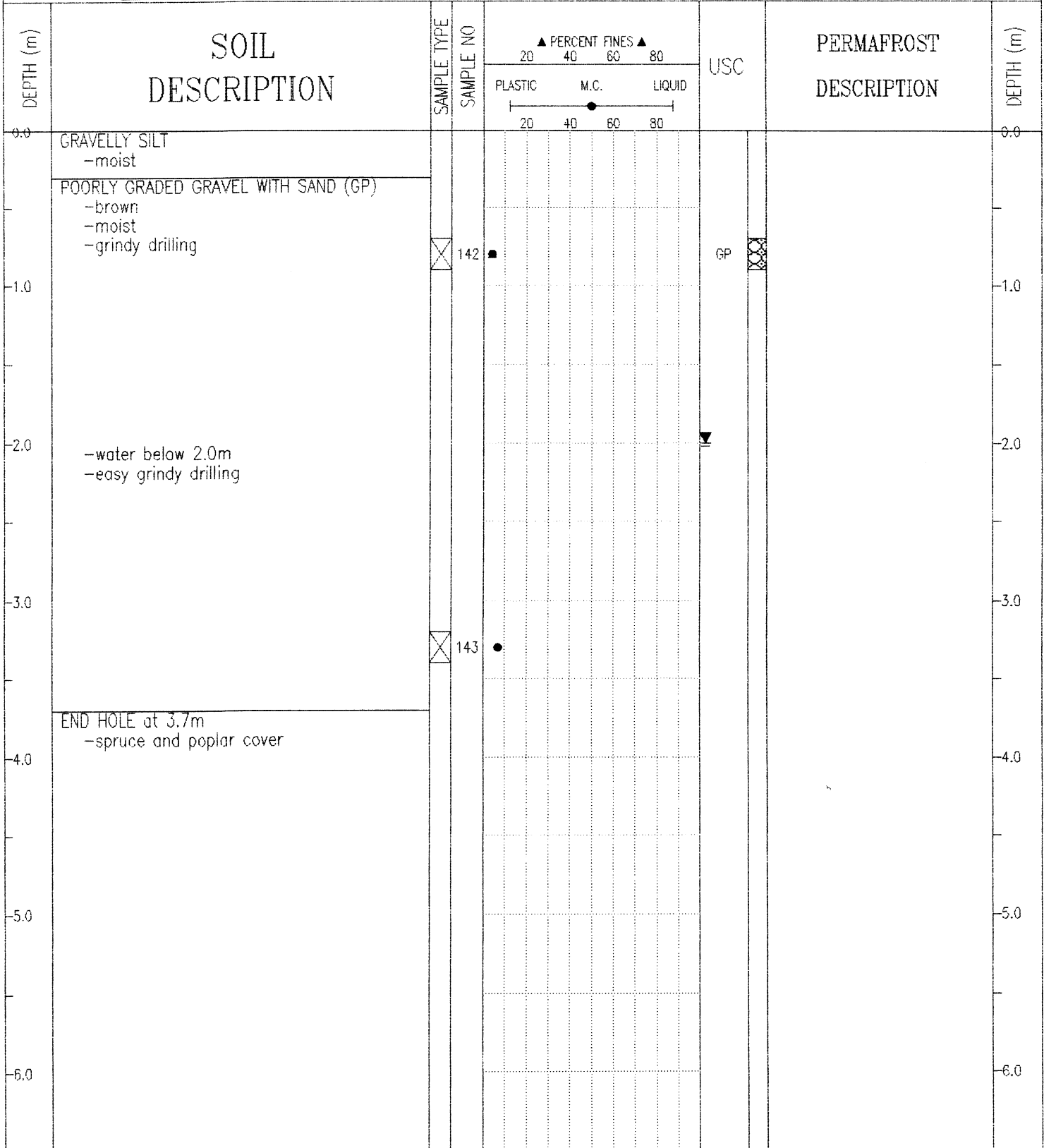


SUBSURFACE EXPLORATION AND TEST REPORT ALASKA HIGHWAY PRE-ENGINEERING BOREHOLE No. 108-59

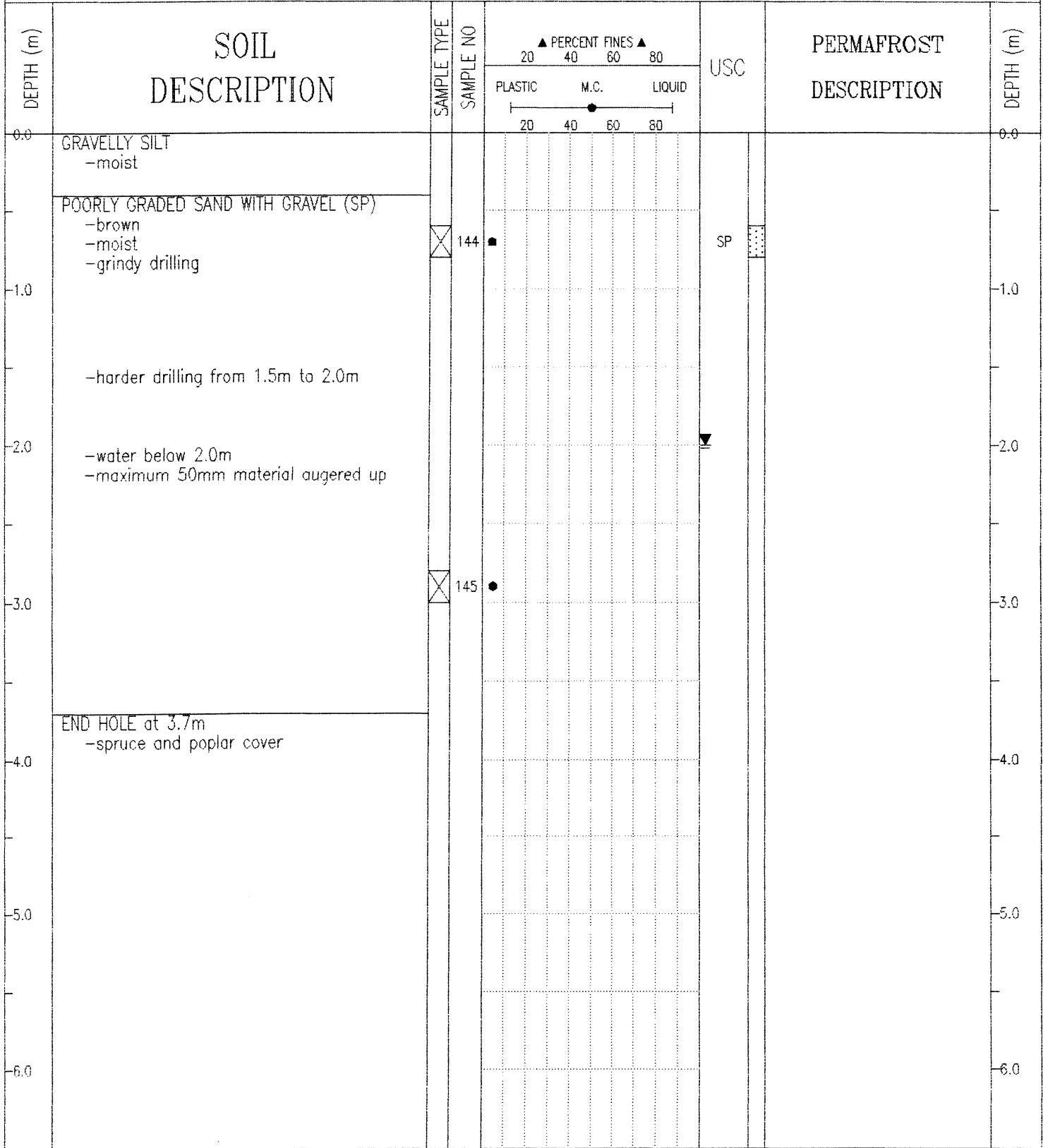
SHAKWAK PROJECT A/H KM 1931.9-1965.5 Project No: SEGMENT 18

DRILL: B61 150mm Dia. SOLID STEM AUGER LOCATION: STA 1941+300 o/s 5m Rt. ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-60
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1941+450 o/s 4m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



Public Works Canada  
Whitehorse, Yukon Territory.

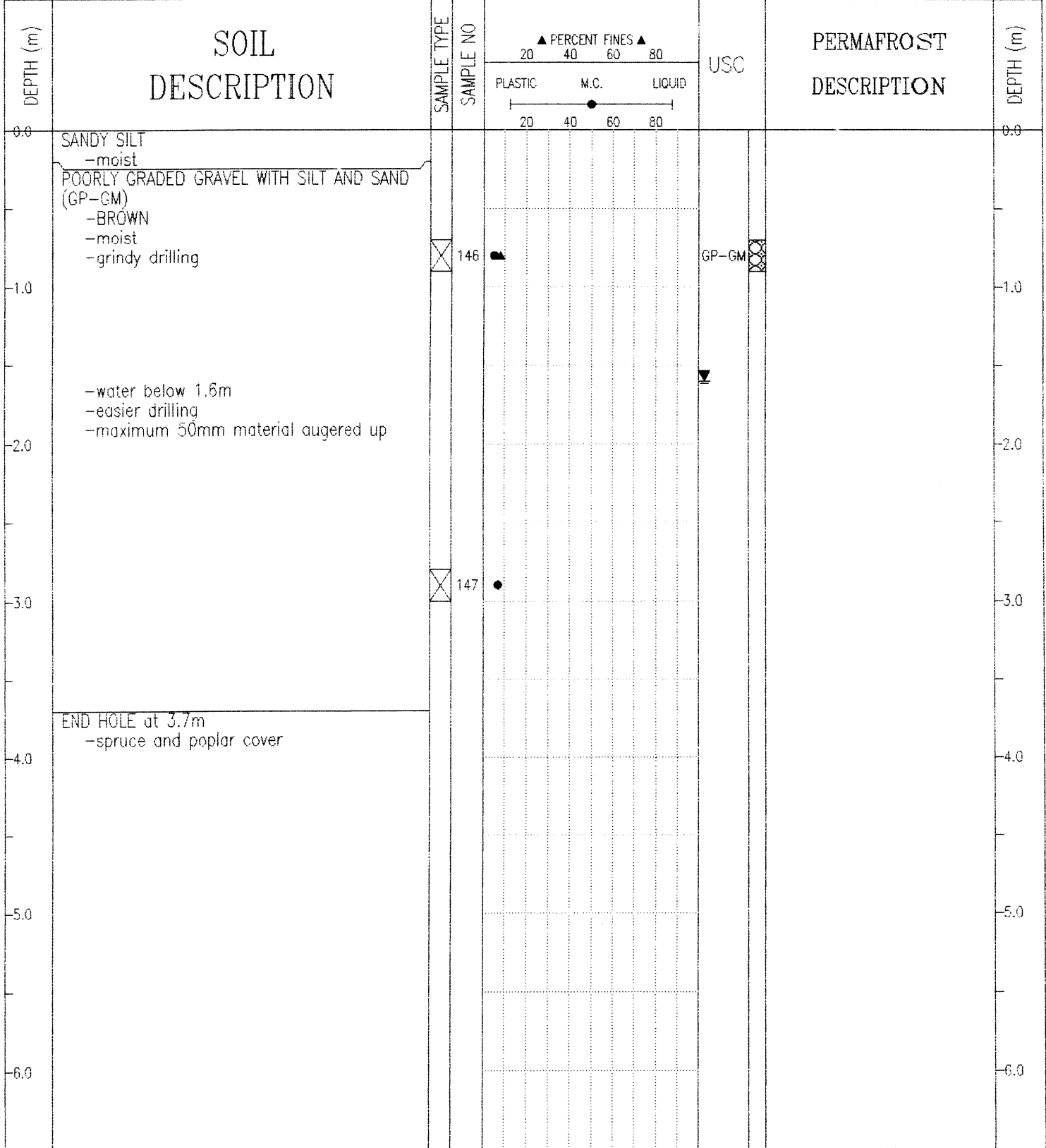
COMPLETION DEPTH 3.7 m	COMPLETE 90/10/04
LOGGED BY JM	DWG NO.
	Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-61
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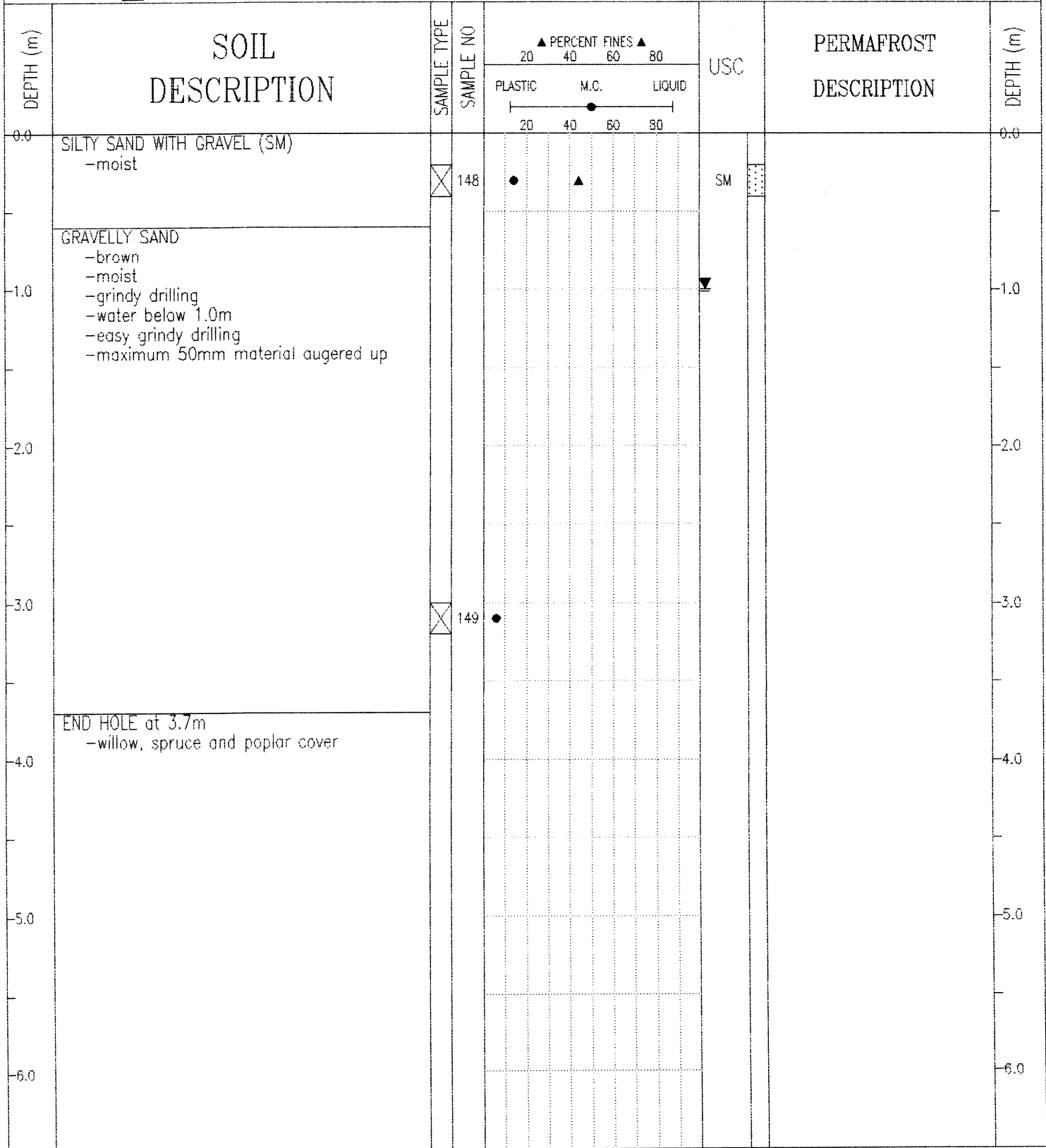
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
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DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1941+600 o/s 4m Rt.	ELEVATION 0.000 (m)
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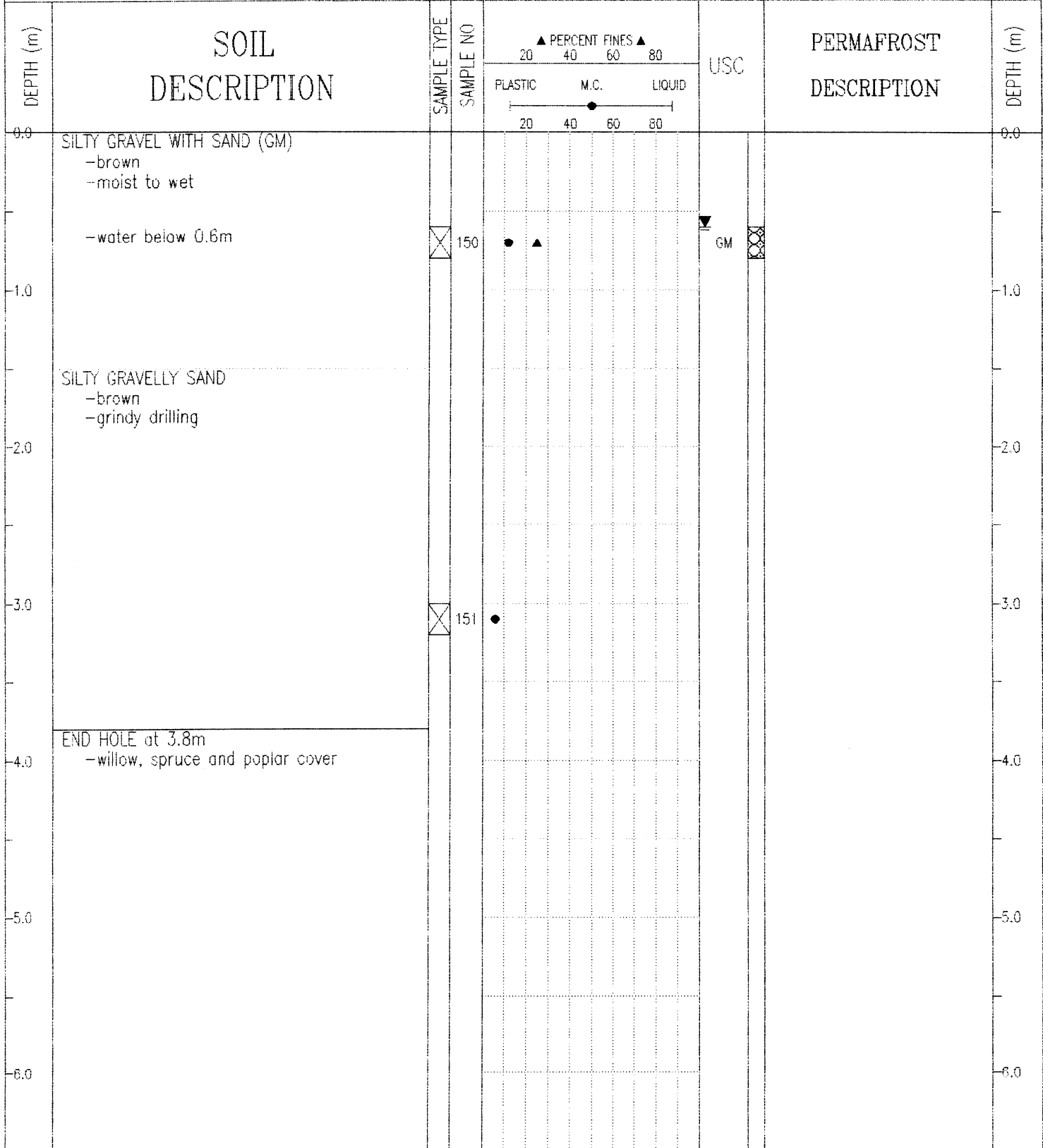
SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-62
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 19
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1941+750 o/s 4m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-63
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1941+900 o/s 4m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		BOREHOLE No. 108-64				
SHAKWAK PROJECT		A/H KM 1931.9-1965.5		Project No: SEGMENT 18				
DRILL: B61 150mm Dia. SOLID STEM AUGER		LOCATION: STA 1942+050 o/s 5m Rt.		ELEVATION 0.000 (m)				
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲		USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.			
0.0	SANDY SILT WITH GRAVEL (ML) -brown -damp			20	40	60	80	0.0
-1.0	-water below 0.8m	<input checked="" type="checkbox"/>	152	●	▲	▼ ML		-1.0
-2.0	GRAVELLY SAND -saturated							-2.0
-3.0	END HOLE at 3.0m -willow and spruce cover	<input checked="" type="checkbox"/>	153	●				-3.0
-4.0								-4.0
-5.0								-5.0
-6.0								-6.0
Public Works Canada Whitehorse, Yukon Territory.			COMPLETION DEPTH 3.0 m		COMPLETE 90/10/04			
			LOGGED BY JM		DWG NO.		Page 1 of 1	



SUBSURFACE EXPLORATION AND TEST REPORT ALASKA HIGHWAY PRE-ENGINEERING BOREHOLE No. 108-66

SHAKWAK PROJECT A/H KM 1931.9-1965.5 Project No: SEGMENT 18

DRILL: B61 150mm Dia. SOLID STEM AUGER LOCATION: STA 1942+500 o/s 1m Rt. ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	CRUSHED GRAVEL -road fill -hard grindy drilling							0.0	
0.5	GRAVELLY SAND -pitrun fill							1.0	
1.5	SILTY SAND WITH GRAVEL (SM) -organic material -layered -moist -easy drilling	X	156	20	40	60	SM	2.0	
2.5	GRAVELLY SAND -water below 2.4m -grindy drilling							3.0	
3.0	END HOLE at 3.0m -in existing road							4.0	
4.0								5.0	
5.0								6.0	

Public Works Canada  
Whitehorse, Yukon Territory.

COMPLETION DEPTH 3.0 m

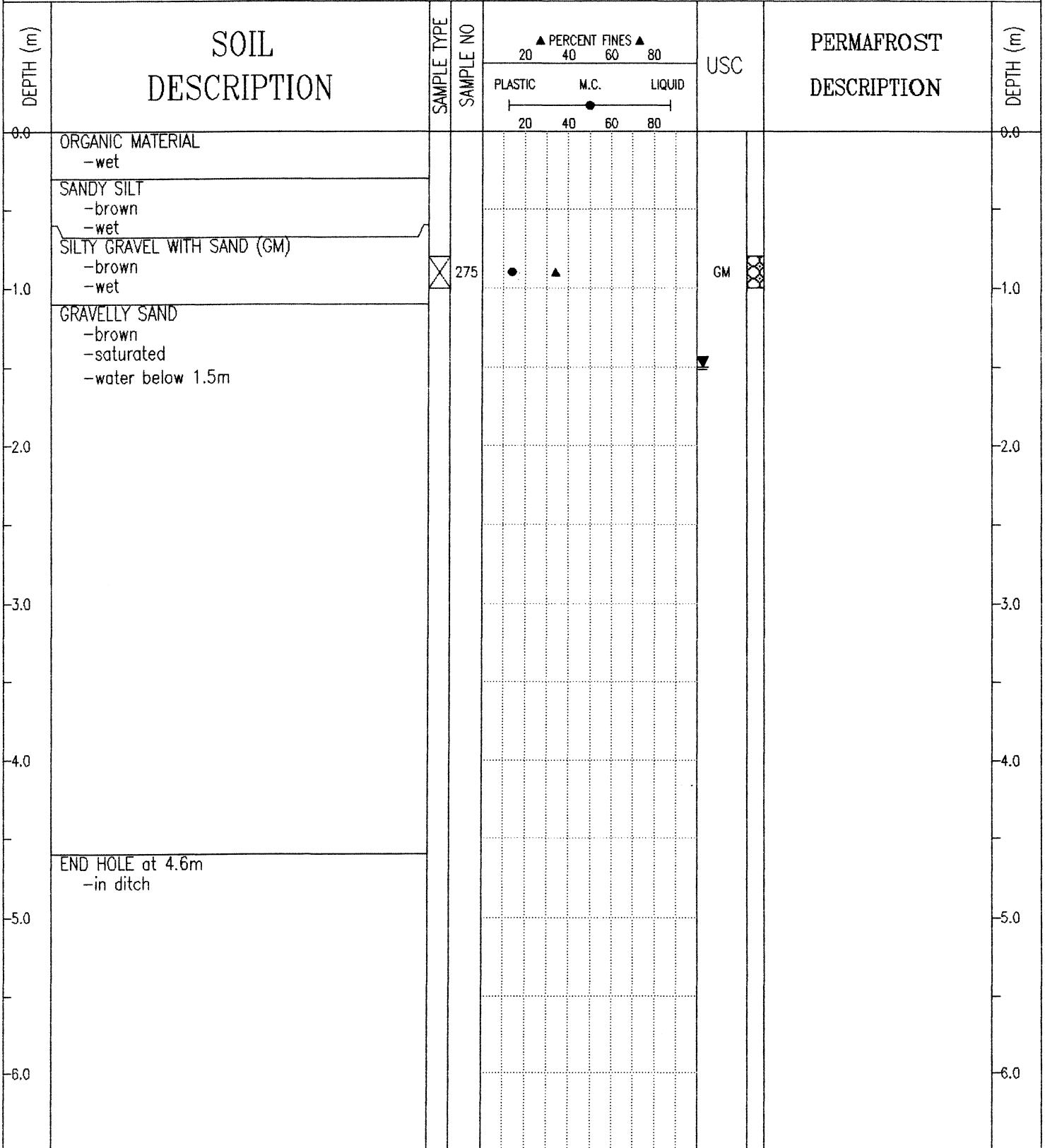
COMPLETE 90/10/04

LOGGED BY JM

DWG NO.

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SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 109-139
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1942+500 o/s 6m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 109-140
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1942+500 o/s 25m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL							0.0	
	SILTY GRAVEL WITH SAND (GM) -wet								
-1.0	-hard grindy drilling below 1.0m -frozen below 1.2m	<input checked="" type="checkbox"/>	276	●	▲		GM	-1.0	
-1.5	END HOLE at 1.5m -refusal								
-2.0								-2.0	
-3.0								-3.0	
-4.0								-4.0	
-5.0								-5.0	
-6.0								-6.0	

Public Works Canada Whitehorse, Yukon Territory.	COMPLETION DEPTH 1.5 m	COMPLETE 90/10/09
	LOGGED BY JM	DWG NO.

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		BOREHOLE No. 109-141				
SHAKWAK PROJECT		A/H KM 1931.9-1965.5		Project No: SEGMENT 18				
DRILL: B61 150mm Dia. SOLID STEM AUGER		LOCATION: STA 1942+700 o/s 20m Lt.		ELEVATION 0.000 (m)				
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲		USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.			
0.0	ORGANIC MATERIAL							0.0
	SANDY SILT -wet							
-1.0	-visible ice crystals below 0.8m -tighter drilling below 0.8m	<input checked="" type="checkbox"/>	277					-1.0
	GRAVELLY SAND -brown -frozen -hard grindy drilling							
-2.0		<input checked="" type="checkbox"/>	278					-2.0
	END HOLE at 2.1m -refusal							
-3.0								-3.0
-4.0								-4.0
-5.0								-5.0
-6.0								-6.0
Public Works Canada Whitehorse, Yukon Territory.				COMPLETION DEPTH 2.1 m		COMPLETE 90/10/09		
				LOGGED BY JM		DWG NO.		Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		BOREHOLE No. 108-67				
SHAKWAK PROJECT		A/H KM 1931.9-1965.5		Project No: SEGMENT 18				
DRILL: B61 150mm Dia. SOLID STEM AUGER		LOCATION: STA 1942+900 o/s 3m Lt.		ELEVATION 0.000 (m)				
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲		USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.			
0.0	CRUSHED GRAVEL -road fill -hard drilling			20	40	60	80	0.0
1.0	GRAVEL -pitrun fill -moist							1.0
2.0	ORGANIC MATERIAL -easy drilling -water below 2.0m							2.0
	ORGANIC SILTY GRAVEL -easy drilling	<input checked="" type="checkbox"/>	157					
	POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM) -grindy drilling	<input checked="" type="checkbox"/>	158					
3.0	END HOLE at 3.0m -on existing road							3.0
4.0								4.0
5.0								5.0
6.0								6.0
Public Works Canada Whitehorse, Yukon Territory.				COMPLETION DEPTH 3.0 m		COMPLETE 90/10/04		
				LOGGED BY JM		DWG NO.		Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-142
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1942+900 o/s 16m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL							0.0	
	SANDY SILT -wet -organics								
	SILTY GRAVELLY SAND -wet								
1.0	WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM) -wet -easy grindy drilling	<input checked="" type="checkbox"/>	279				GW-GM	1.0	
2.0								2.0	
3.0	-water below 3.1m							3.0	
4.0								4.0	
	-frozen below 4.3m -hard drilling below 4.3m								
5.0	END HOLE at 4.6m -in ditch							5.0	
6.0								6.0	

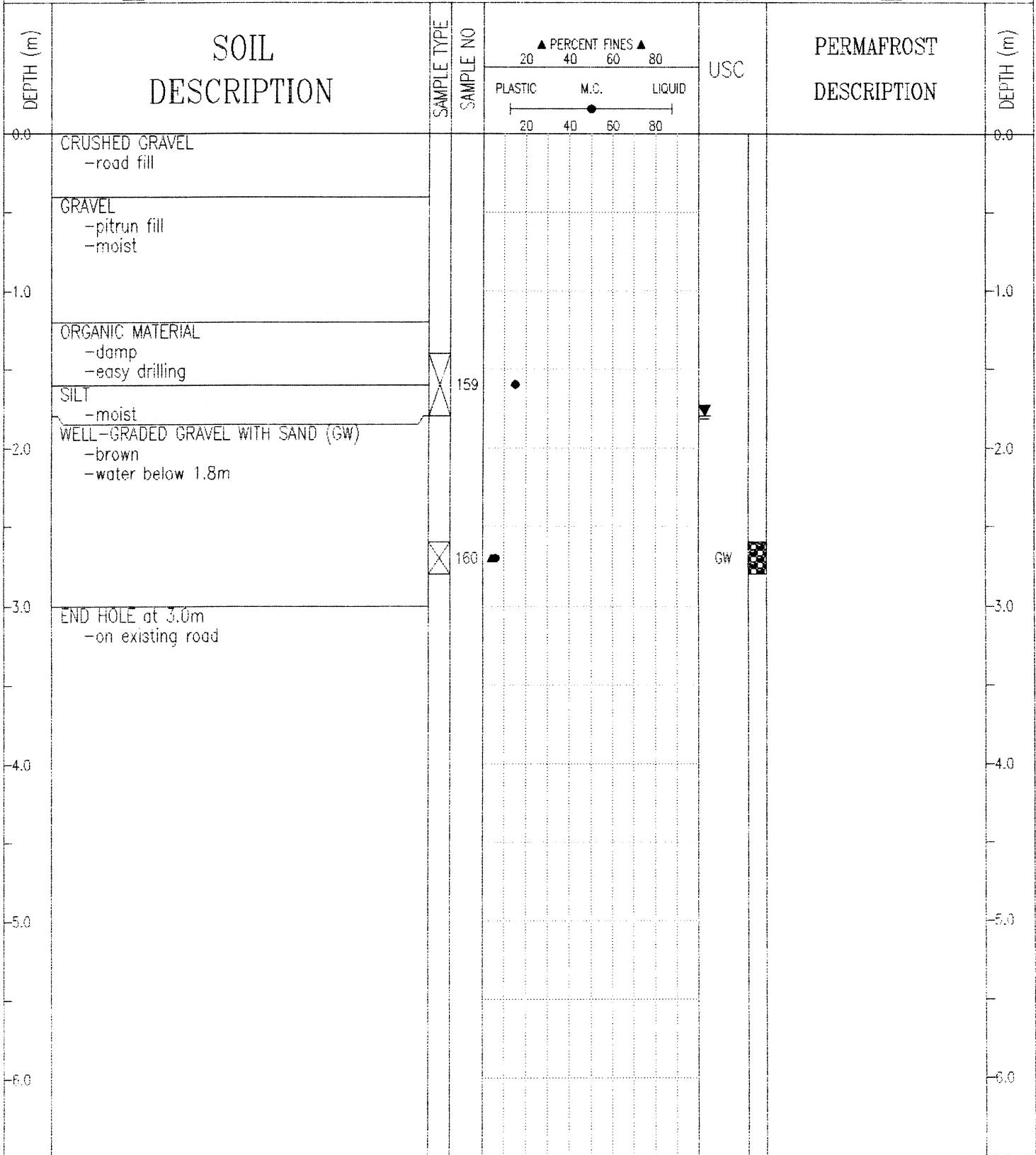
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-143
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1942+900 o/s 30m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL							0.0	
	SANDY SILT -wet -frozen with visible ice crystals below 0.5m								
-1.0	SILTY GRAVEL (GM) -frozen	<input checked="" type="checkbox"/>	280	●	▲		GM	-1.0	
-2.0	END HOLE at 1.6m -two refusals at 1.6m							-2.0	
-3.0								-3.0	
-4.0								-4.0	
-5.0								-5.0	
-6.0								-6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-144
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1943+100 o/s 18m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL -frozen below 0.2m  -visible ice below 0.8m								0.0
1.0	SILTY SAND WITH GRAVEL (SM) -frozen -very hard rough drilling	<input checked="" type="checkbox"/>	281	▲	●		SM		1.0
2.0	END HOLE at 1.6m								2.0
3.0									3.0
4.0									4.0
5.0									5.0
6.0									6.0

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-68
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1943+300 o/s 1m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



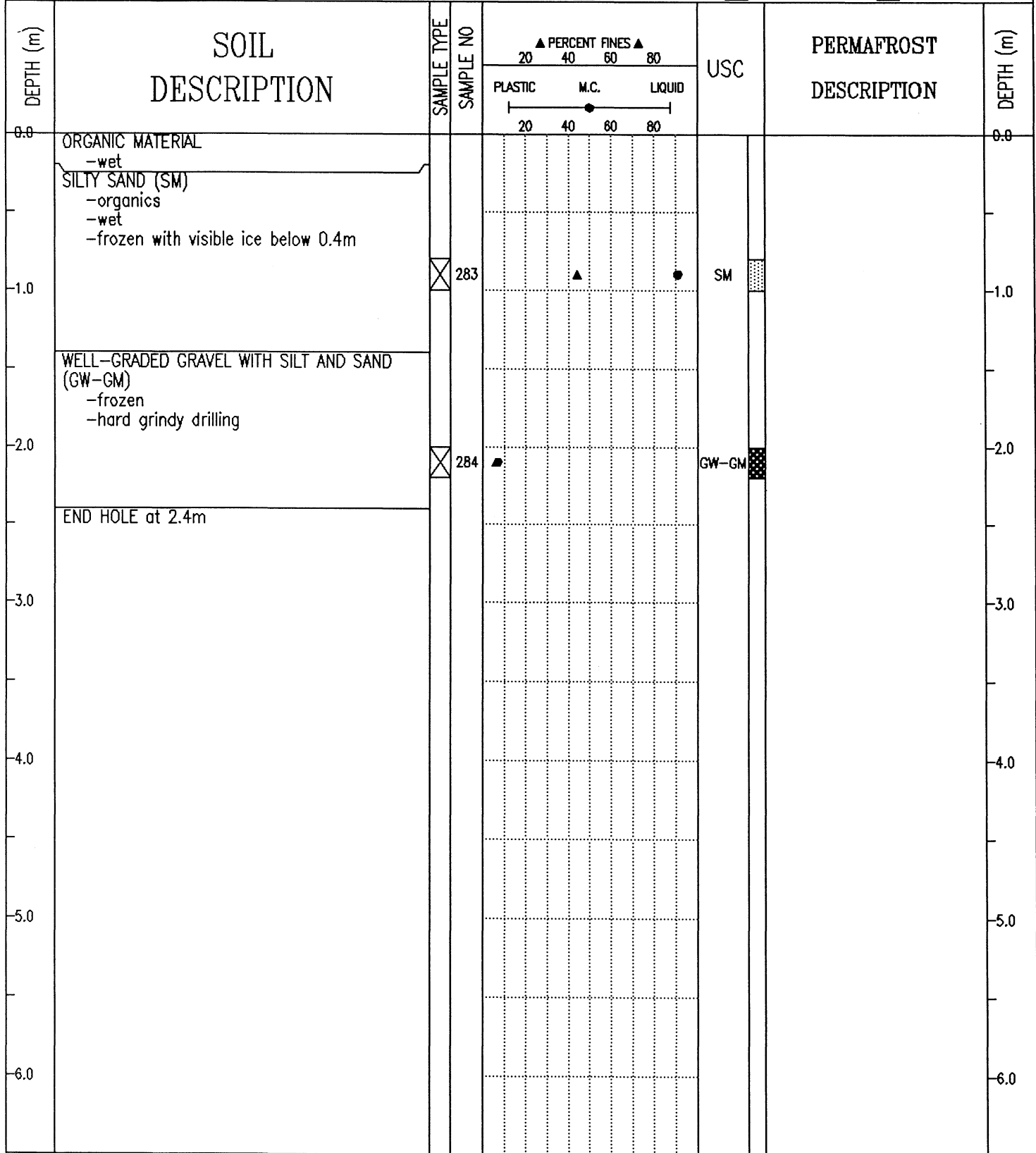
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-145
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1943+300 o/s 7m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL							0.0	
	SILTY GRAVELLY SAND -wet								
	GRAVELLY SAND -saturated -grindy drilling								
-1.0								-1.0	
	-water below 1.8m -maximum 50mm material augered up								
-2.0								-2.0	
-3.0								-3.0	
-4.0								-4.0	
	-frozen below 4.0m								
-5.0								-5.0	
	END HOLE at 4.6m -in ditch								
-6.0								-6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-146
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1943+300 o/s 20m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL -wet							0.0	
0.8	SILTY SAND (SM) -organics -wet -frozen with visible ice crystals below 0.6m	<input checked="" type="checkbox"/>	282	55	25	75	SM	1.0	
1.0	SILTY GRAVEL -frozen -very hard drilling								
1.6	END HOLE at 1.6m								
2.0								2.0	
3.0								3.0	
4.0								4.0	
5.0								5.0	
6.0								6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-147
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1943+500 o/s 18m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

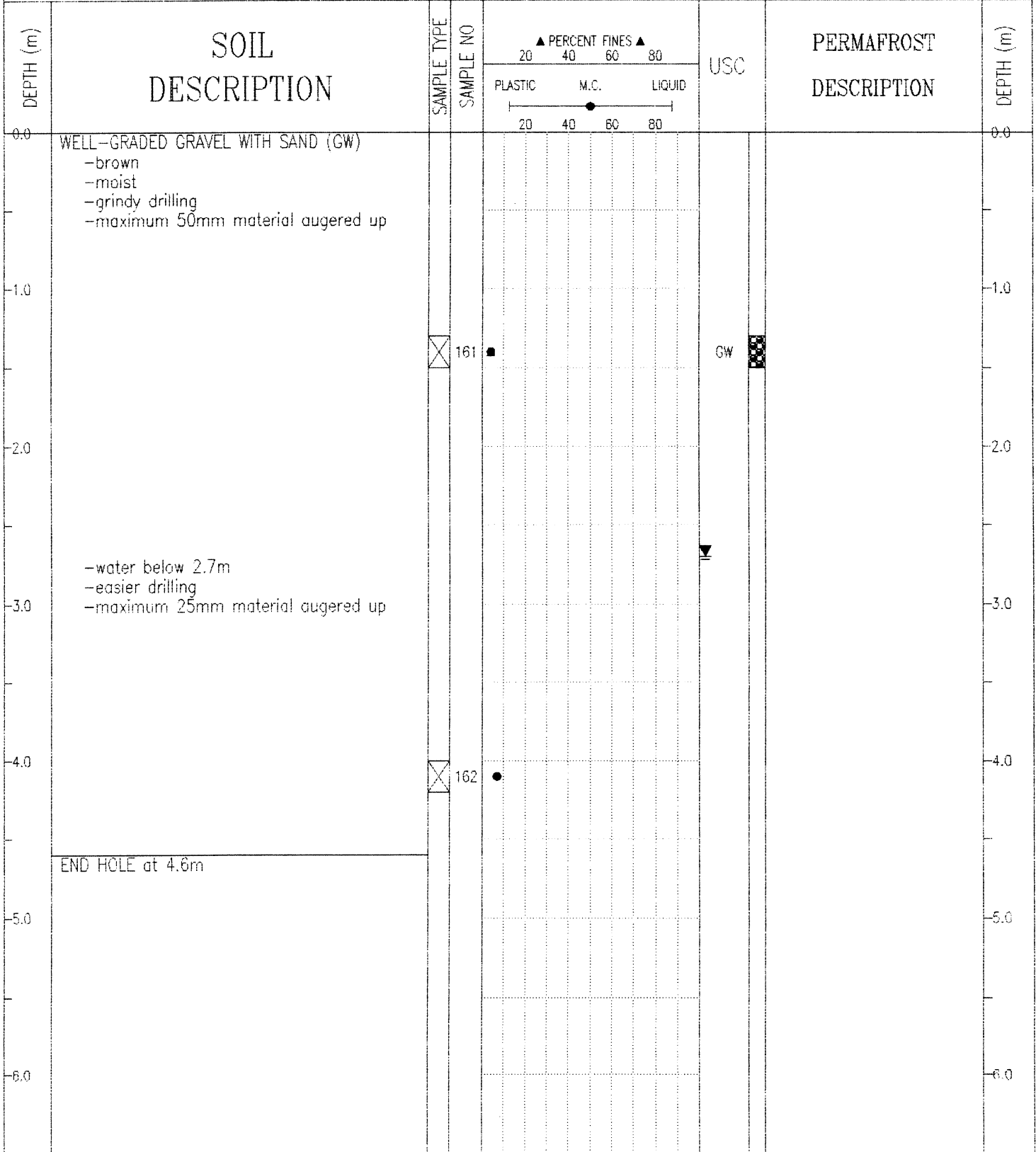


SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-69
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SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
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DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1943+688 c/s 2m Rt.	ELEVATION 0.000 (m)
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SAMPLE TYPE	<input type="checkbox"/> RETURN	<input checked="" type="checkbox"/> S.P.T.	<input checked="" type="checkbox"/> AUGER	<input type="checkbox"/> BULK	<input type="checkbox"/> TUBE	<input type="checkbox"/> CORE
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Public Works Canada Whitehorse, Yukon Territory.	COMPLETION DEPTH 4.6 m	COMPLETE 90/10/04	LOGGED BY JM	DWG NO.	Page 1 of 1
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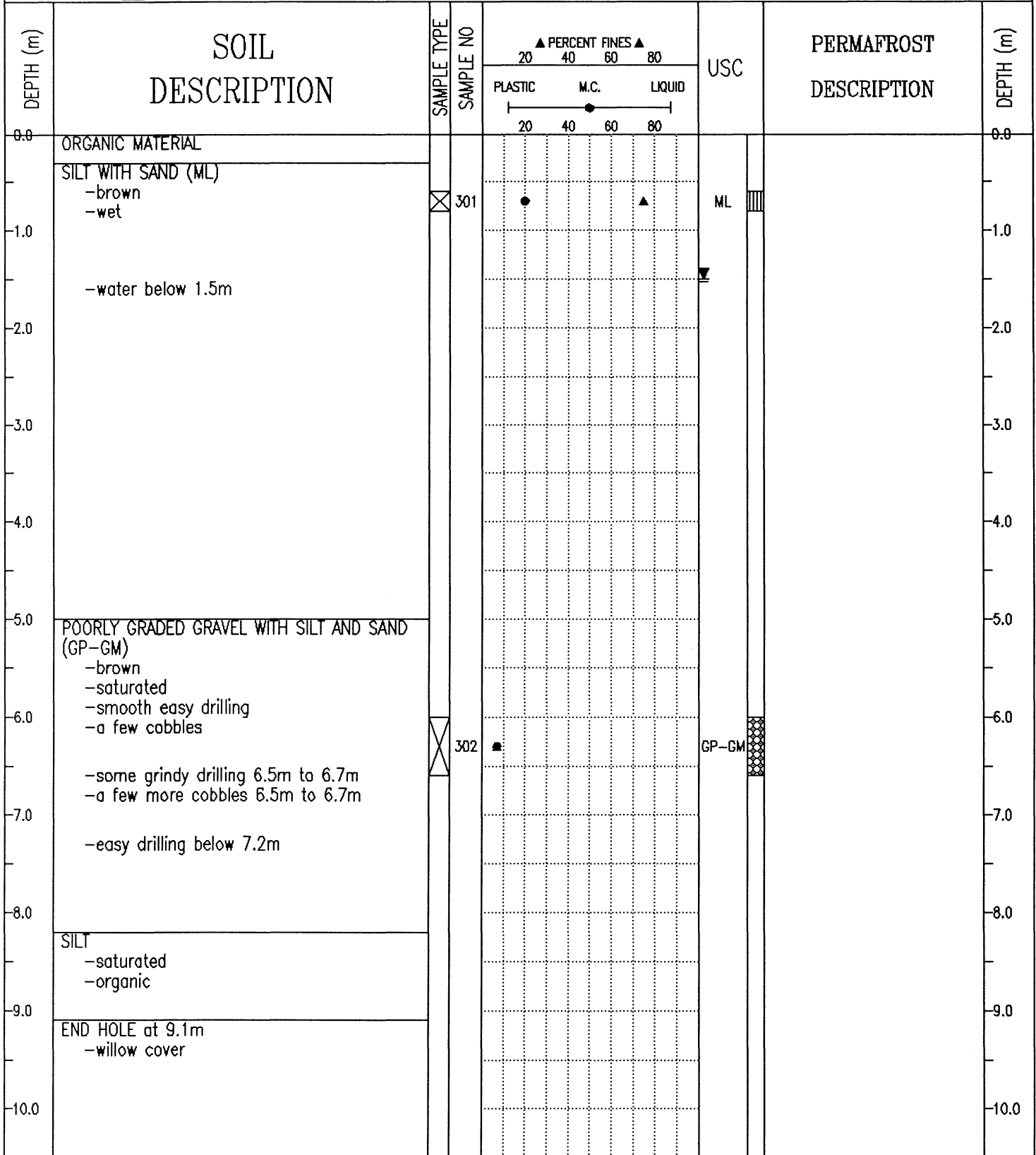
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-157
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL							0.0	
	SANDY SILT -wet								
	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM) -BROWN -FROZEN -hard drilling								
1.0	-hard grindy drilling below 1.2m -cobbles	<input checked="" type="checkbox"/>	298	▲			SP-SM	1.0	
2.0	END HOLE at 1.6m -poplar and willow cover							2.0	
3.0								3.0	
4.0								4.0	
5.0								5.0	
6.0								6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-158
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

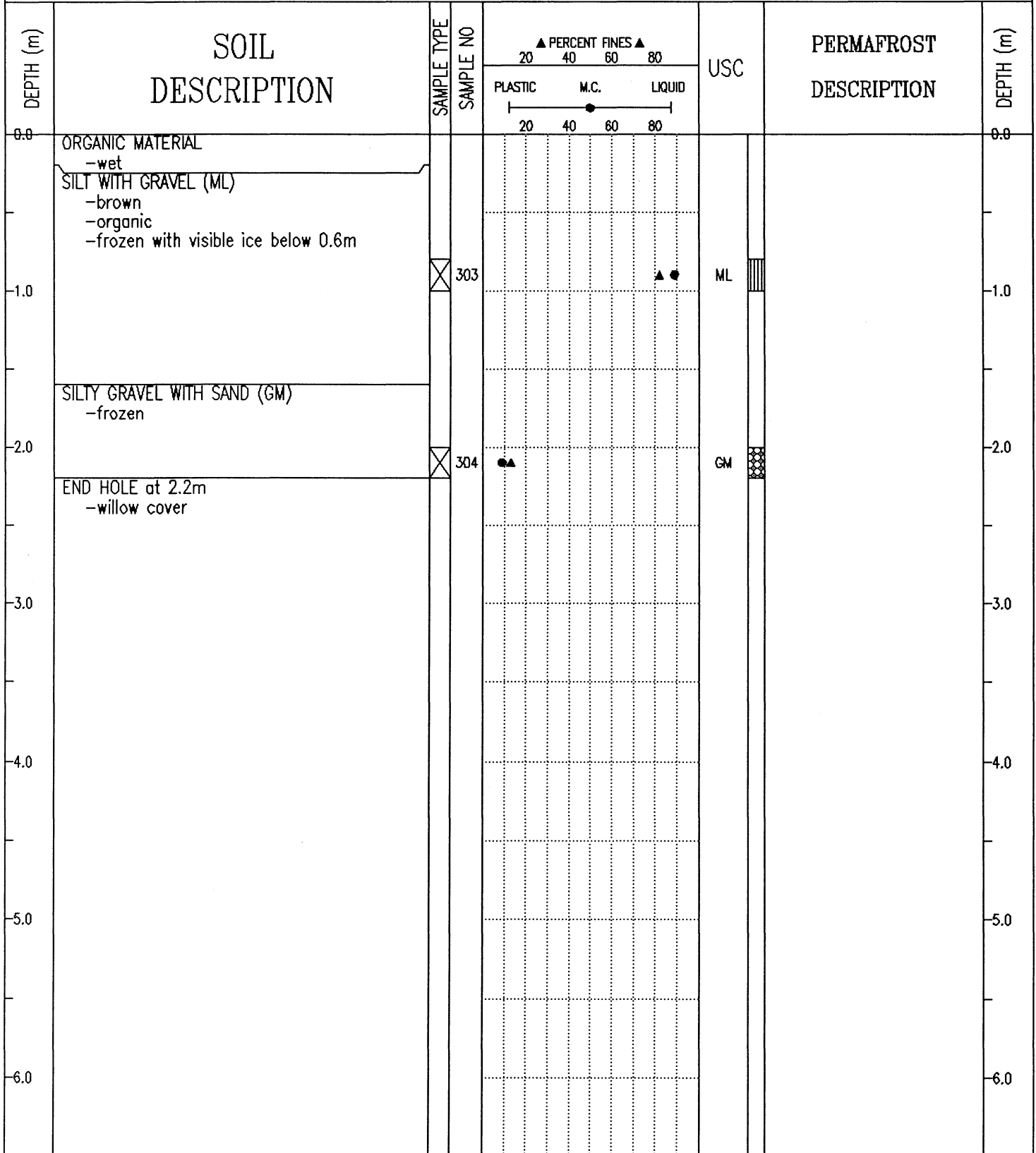
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL							0.0	
	SANDY SILT -organics -wet								
	SILTY GRAVEL (GM) -brown -frozen	<input checked="" type="checkbox"/>	299				GM		
	WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM) -frozen -very hard grindy drilling	<input checked="" type="checkbox"/>	300				GW-GM		
	END HOLE at 1.6m -polar, spruce and willow cover								
-2.0								-2.0	
-3.0								-3.0	
-4.0								-4.0	
-5.0								-5.0	
-6.0								-6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-159
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-160
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



Public Works Canada  
Whitehorse, Yukon Territory.

COMPLETION DEPTH 2.2 m

COMPLETE 9D/10/10

LOGGED BY JM

DWG NO.

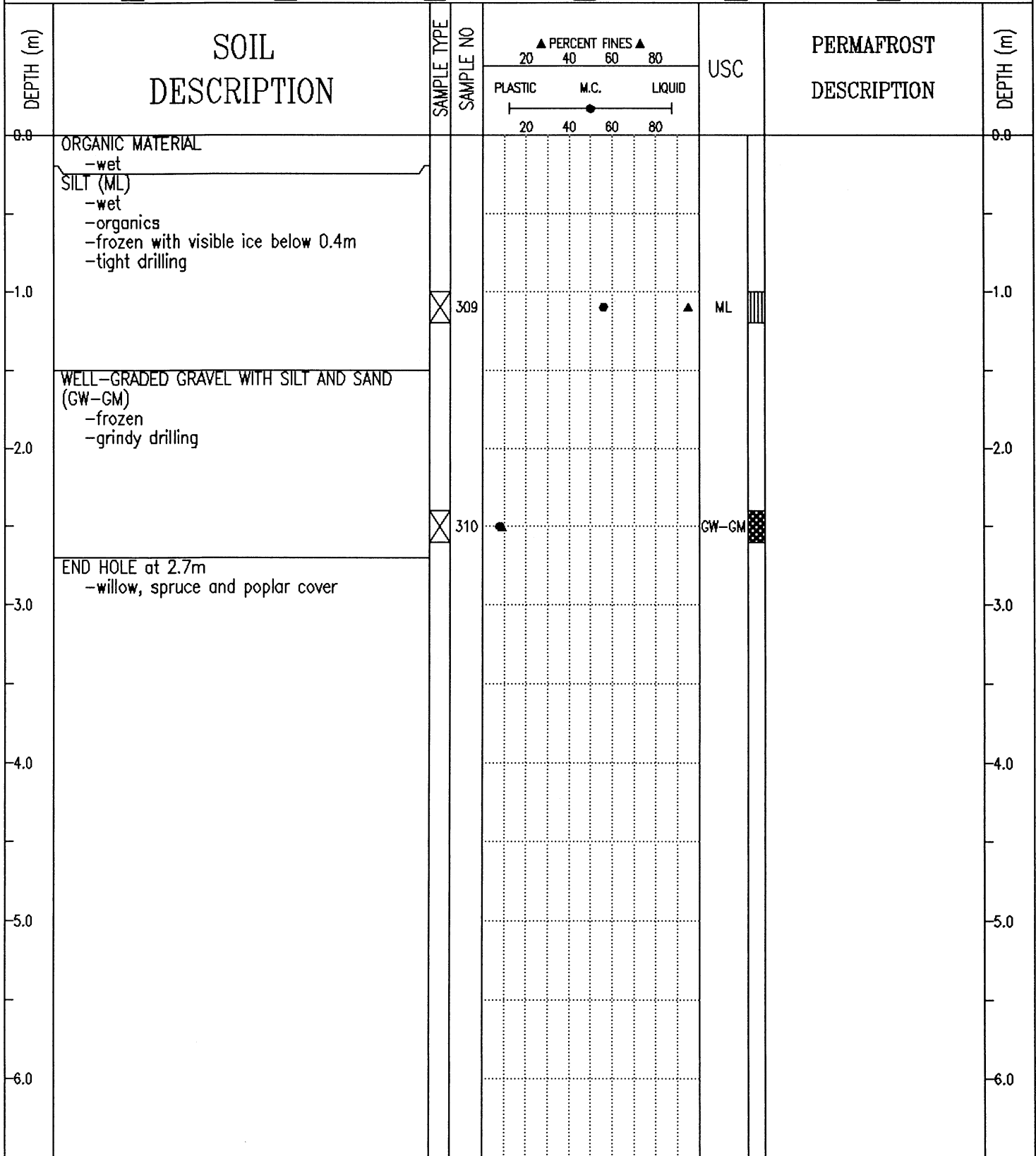
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SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-161
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL							0.0	
0.0 - 0.5	SANDY SILT -damp								
0.5 - 1.0	GRAVELLY SILT -damp								
1.0 - 1.6	WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM) -brown -damp -grindy drilling -water below 1.6m	<input checked="" type="checkbox"/>	305	▲			GW-GM		
1.6 - 3.0	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM) -brown -saturated -easy drilling	<input checked="" type="checkbox"/>	306	▲			SP-SM		
3.0 - 4.8		<input checked="" type="checkbox"/>	307	▲ ●			SP-SM		
4.8 - 6.5									
6.5 - 8.8	POORLY GRADED SAND WITH GRAVEL (SP) -brown -saturated -easy drilling, some grinding -a few cobbles in material								
8.8 - 9.1		<input checked="" type="checkbox"/>	308	▲ ●			SP		
9.1 - 10.0	END HOLE at 9.1m -poplar and spruce cover								

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-162
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-163
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL								0.0
	SANDY SILT -brown -moist -organics -frozen below 0.5m								
1.0	GRAVELLY SILT -frozen								1.0
	SILTY GRAVEL WITH SAND (GM) -brown -frozen -very hard grindy drilling	<input checked="" type="checkbox"/>	311	●	▲		GM		
2.0									2.0
	END HOLE at 2.3m -willow and spruce cover								
3.0									3.0
4.0									4.0
5.0									5.0
6.0									6.0

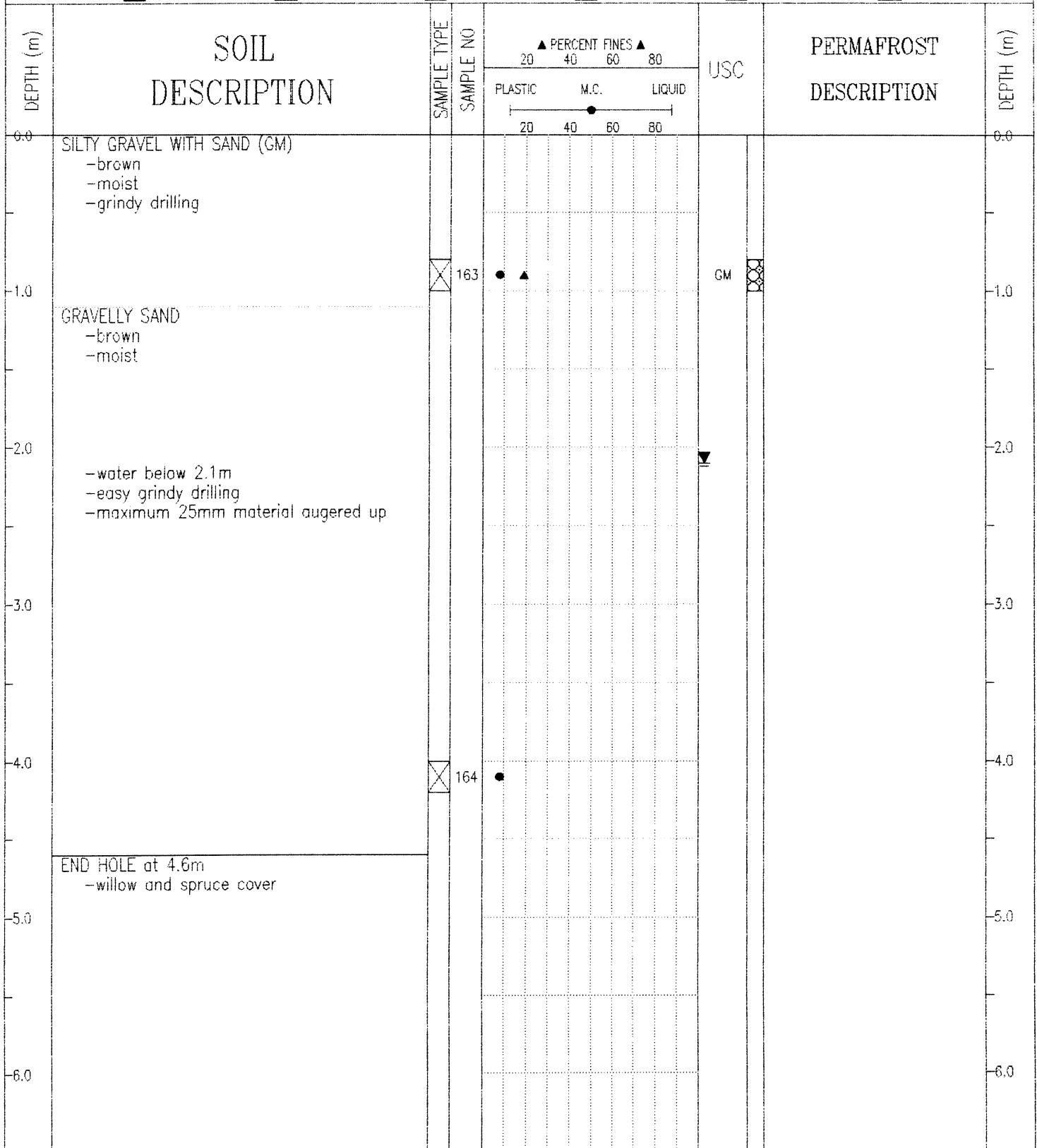
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-164
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	SILT -moist							0.0	
0.0 - 1.0	POORLY TO WELL-GRADED GRAVEL WITH SAND (GP TO GW) -brown -moist -grindy drilling							1.0	
1.0 - 2.0								2.0	
2.0 - 3.0	-wet below 1.8m -easier grindy drilling below 1.8m							3.0	
3.0 - 4.0								4.0	
4.0 - 5.0								5.0	
5.0 - 6.0								6.0	
6.0 - 7.0	END HOLE at 6.1m -poplar and spruce cover							7.0	
7.0 - 8.0								8.0	
8.0 - 9.0								9.0	
9.0 - 10.0								10.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-165
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	SILT -damp							0.0	
0.0 - 1.0	WELL TO POORLY GRADED GRAVEL WITH SAND (GW TO GP) -brown -damp -hard grindy drilling							1.0	
1.0 - 2.0	-easier grindy drilling below 1.8m							2.0	
2.0 - 3.0	-water below 2.3m							3.0	
3.0 - 4.0	-easier smoother drilling below 2.8m							4.0	
4.0 - 5.0	-maximum 50mm material augered up below 4.0m							5.0	
5.0 - 6.0								6.0	
6.0 - 6.1	END HOLE at 6.1m -spruce and poplar cover							6.1	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-70
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1943+850 o/s 2m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-148
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1944+100 o/s 6m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	SILT -wet GRAVELLY SAND -brown -wet -grindy drilling							0.0	
1.0								1.0	
2.0	-water below 1.8m							2.0	
3.0	-easy grindy drilling							3.0	
4.0								4.0	
5.0	END HOLE at 4.6m -in ditch							5.0	
6.0								6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-149
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1944+100 o/s 25m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL							0.0	
0.0 - 1.0	GRAVELLY SILT (ML) -brown -organics -tight drilling -visible ice crystals		285	45	55	65	ML	1.0	
1.0 - 1.6	GRAVELLY SAND -brown -frozen -very hard grindy drilling END HOLE at 1.6m								
1.6 - 2.0									
2.0 - 3.0									
3.0 - 4.0									
4.0 - 5.0									
5.0 - 6.0									

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-150
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1944+300 o/s 20m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL -wet							0.0	
1.0	SILT -brown -organic -frozen with visible ice crystals -tight drilling	<input checked="" type="checkbox"/>	286					1.0	
2.0	SANDY SILT -organic -frozen with visible ice crystals WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM) -gray -frozen END HOLE at 2.0m	<input checked="" type="checkbox"/>	287				GW-GM	2.0	
3.0								3.0	
4.0								4.0	
5.0								5.0	
6.0								6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-151
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1944+500 o/s 10m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL							0.0	
	SANDY SILT -organic -frozen with visible ice crystals								
1.0	SILTY SAND WITH GRAVEL (SM) -frozen with visible ice crystals							1.0	
	GRAVELLY SAND -frozen -hard grindy drilling	<input checked="" type="checkbox"/>	288				SM		
2.0	END HOLE at 2.1m -in ditch	<input checked="" type="checkbox"/>	289					2.0	
3.0								3.0	
4.0								4.0	
5.0								5.0	
6.0								6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-152
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1944+500 o/s 20m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL -wet  -frozen below 0.5m  -visible ice crystals below 1.0m -very tight drilling								0.0
	SANDY SILT -organic -frozen with visible ice crystals		290						
2.0	GRAVELLY SAND -frozen -very hard grindy drilling								2.0
	END HOLE at 2.4m								
3.0									3.0
4.0									4.0
5.0									5.0
6.0									6.0

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-153
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1944+750 o/s 22m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL							0.0	
	SANDY SILT -organic -frozen with visible ice								
1.0	SANDY SILT (ML) -brown -frozen with visible ice	<input checked="" type="checkbox"/>	291				ML	1.0	
2.0	GRAVELLY SAND -frozen -very hard grindy drilling							2.0	
3.0	END HOLE at 3.0m	<input checked="" type="checkbox"/>	292					3.0	
4.0								4.0	
5.0								5.0	
6.0								6.0	

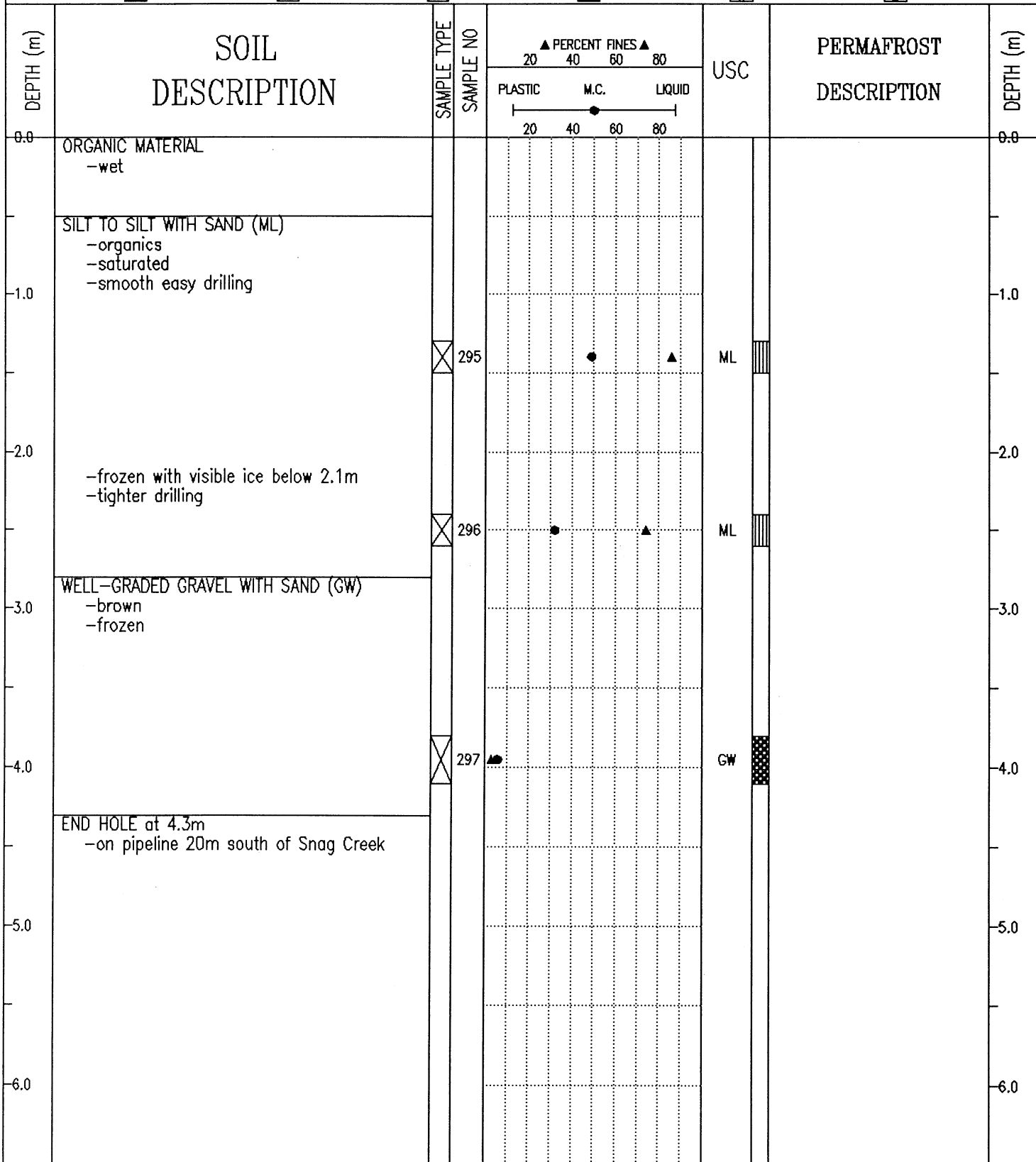
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-154
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1944+725 o/s 75m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL							0.0	
	SANDY SILT -organic -wet -frozen with visible ice below 0.4m -tight drilling								
-1.0	SILTY GRAVEL WITH SAND (GM) -frozen with visible ice	<input checked="" type="checkbox"/>	293	●	▲		GM	-1.0	
-2.0	GRAVELLY SAND -frozen							-2.0	
-3.0	END HOLE at 2.6m							-3.0	
-4.0								-4.0	
-5.0								-5.0	
-6.0								-6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-155
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1944+825 o/s 80m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

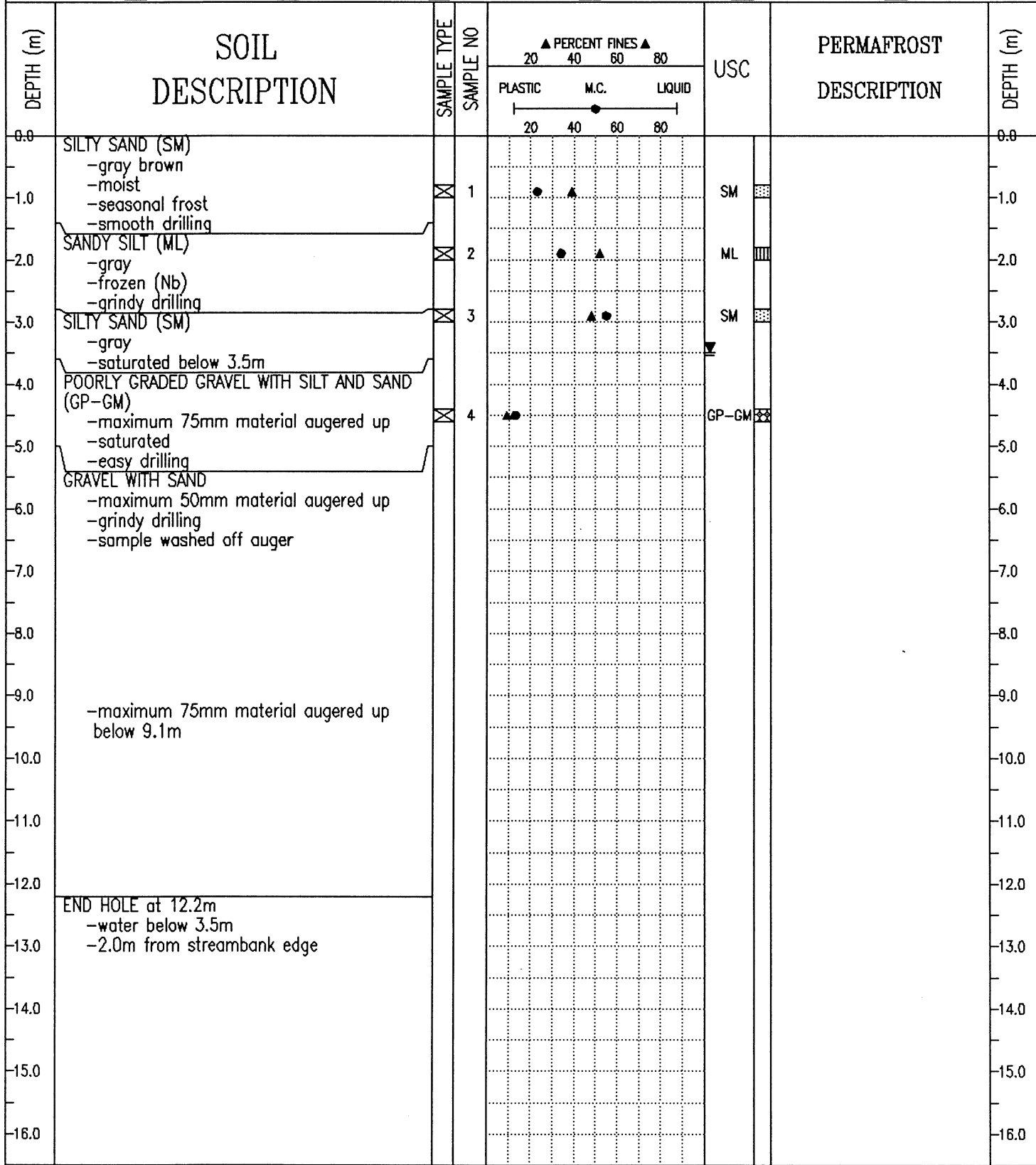
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL -wet SILT (ML) -organic -brown -wet							0.0	
1.0	-frozen with visible ice below 1.4m	<input checked="" type="checkbox"/>	294				ML	1.0	
2.0								2.0	
3.0	GRAVELLY SAND -brown -frozen -grindy drilling -hard grindy drilling below 2.6m							3.0	
4.0	END HOLE at 3.0m -water on surface -9m to 15m spruce trees							4.0	
5.0								5.0	
6.0								6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-156
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1944+860 o/s 90m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



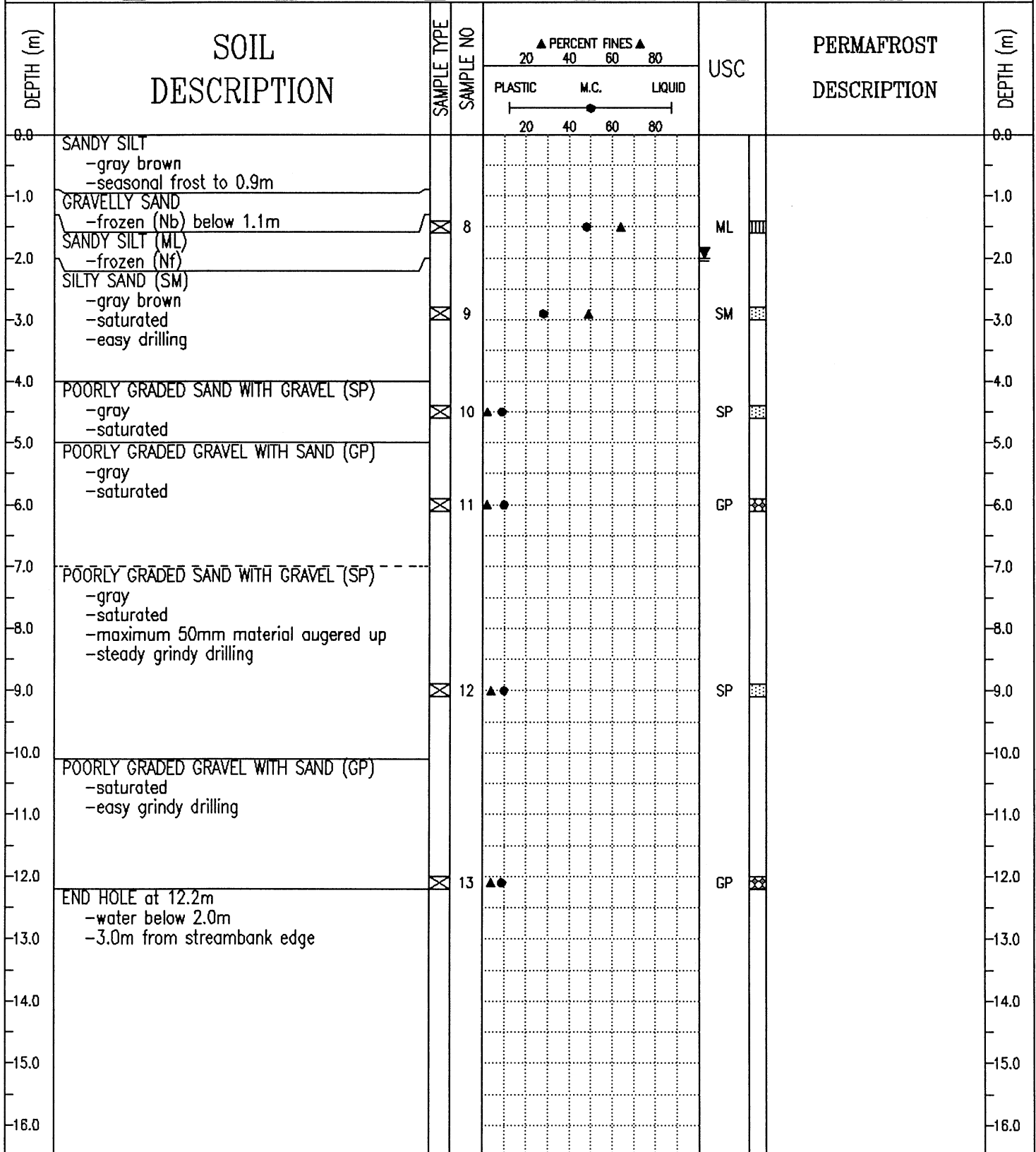
SUBSURFACE EXPLORATION AND TEST REPORT	SEGMENT 18	BOREHOLE No. 165-01
SHAKWAK PROJECT	SNAG CREEK	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: 1944+900	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



SUBSURFACE EXPLORATION AND TEST REPORT	SEGMENT 18	BOREHOLE No. 165-03
SHAKWAK PROJECT	SNAG CREEK	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: 1944+929	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



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COMPLETION DEPTH 12.2 m

COMPLETE 92/03/25

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SUBSURFACE EXPLORATION AND TEST REPORT	SEGMENT 18	BOREHOLE No. 165-02
SHAKWAK PROJECT	SNAG CREEK	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: 1944+936 o/s 15m Lt.	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	SANDY SILT -gray brown -seasonal frost							0.0	
-1.0	GRAVELLY SAND -seasonal frost to 0.8m							-1.0	
-2.0	SILT WITH SAND (ML) -brown -frozen (Nb) -(Nf) below 1.5m	<input checked="" type="checkbox"/>	5	●	▲	ML		-2.0	
-3.0	SILTY SAND -dark brown -not frozen -saturated below 2.7m							-3.0	
-4.0	SAND -saturated							-4.0	
-5.0	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM) -saturated	<input checked="" type="checkbox"/>	6	▲●		SP-SM		-5.0	
-6.0	POORLY GRADED GRAVEL WITH SAND (GP) -saturated	<input checked="" type="checkbox"/>	7	▲●		GP		-6.0	
-7.0	END HOLE at 6.1m -water below 2.7m -5.0m from streambank edge							-7.0	
-8.0								-8.0	
-9.0								-9.0	
-10.0								-10.0	

SUBSURFACE EXPLORATION AND TEST REPORT ALASKA HIGHWAY PRE-ENGINEERING BOREHOLE No. 108-71

SHAKWAK PROJECT A/H KM 1931.9-1965.5 Project No: SEGMENT 18

DRILL: B61 150mm Dia. SOLID STEM AUGER LOCATION: STA 1944+110 o/s 1m Rt. *SEE PLANS* ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	CRUSHED GRAVEL -road fill							0.0	
0.0 - 1.0	GRAVEL -pitrun road fill -damp -grindy drilling							1.0	
1.0 - 1.5	ORGANIC MATERIAL							1.5	
1.5 - 2.0	SILTY GRAVEL WITH SAND (GM) -moist -easy drilling	<input checked="" type="checkbox"/>	165	●	▲		GM	2.0	
2.0 - 4.6	GRAVELLY SAND -brown -grindy drilling -water below 2.5m						▼	3.0	
4.6 - 5.0	END HOLE at 4.6m -on existing road							5.0	

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COMPLETION DEPTH 4.6 m COMPLETE 90/10/04  
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SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		BOREHOLE No. 108-72				
SHAKWAK PROJECT		A/H KM 1931.9-1965.5		Project No: SEGMENT 18				
DRILL: B61 150mm Dia. SOLID STEM AUGER		LOCATION: <del>STA 1944+500 c/s 3m Rt</del> <i>SEE PLANS</i>		ELEVATION 0.000 (m)				
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80		USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.			
0.0	CRUSHED GRAVEL -road fill							0.0
	GRAVEL -pitrun fill -damp -hard grindy drilling							
-1.0								-1.0
	ORGANIC MATERIAL -moist -smooth easy drilling							
-2.0								-2.0
	-frozen from 2.1m to 2.5m							
-2.5		<input checked="" type="checkbox"/>	166					
	WELL-GRADED GRAVEL WITH SILT AND SAND (GW-GM) -water below 2.7m -frozen below 3.1m -hard grindy drilling							
-3.0								-3.0
-4.0		<input checked="" type="checkbox"/>	167			GW-GM		-4.0
	END HOLE at 4.6m -on existing road							
-5.0								-5.0
-6.0								-6.0

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COMPLETION DEPTH 4.6 m	COMPLETE 90/10/04
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SUBSURFACE EXPLORATION AND TEST REPORT ALASKA HIGHWAY PRE-ENGINEERING BOREHOLE No. 108-73

SHAKWAK PROJECT A/H KM 1931.9-1965.5 Project No: SEGMENT 18

DRILL: B61 150mm Dia. SOLID STEM AUGER LOCATION: STA 1944+750 o/s 3m Rt. SEE PLANS ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	CRUSHED GRAVEL -road fill -hard drilling								0.0
	GRAVEL -pitrun fill								
-1.0									-1.0
-2.0									-2.0
	-water below 2.3m -easier drilling								
-3.0		<input checked="" type="checkbox"/>	168						-3.0
	ORGANIC MATERIAL -moist								
-4.0									-4.0
-5.0	SANDY SILT -gray								-5.0
	GRAVELLY SAND -brown-gray -grindy drilling								
-6.0	END HOLE at 5.8m -on existing road								-6.0

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COMPLETION DEPTH 5.8 m

COMPLETE 90/10/05

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SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		BOREHOLE No. 108-74				
SHAKWAK PROJECT		A/H KM 1931.9-1965.5		Project No: SEGMENT 18				
DRILL: B61 150mm Dia. SOLID STEM AUGER		LOCATION: <del>STA 1944+375 o/s 3m Rt.</del> <i>SEE PLANS</i>		ELEVATION 0.000 (m)				
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲		USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.			
0.0	CRUSHED GRAVEL -road fill							0.0
	GRAVEL -pitrun fill -damp -grindy drilling							
-1.0								-1.0
	ORGANIC MATERIAL -moist							
-2.0								-2.0
	SANDY SILT (ML) -gray -moist -frozen below 2.8m	<input checked="" type="checkbox"/>	169	●	▲	▼ ML		
-3.0								-3.0
	GRAVELLY SAND -frozen							
-4.0								-4.0
	SANDY SILT -gray -water from 3.7m to 4.0m -frozen below 4.0m							
-5.0								-5.0
	ORGANIC MATERIAL  -frozen to 5.0m -saturated below 5.0m	<input checked="" type="checkbox"/>	170					
-6.0								-6.0
	GRAVELLY SAND -gray -saturated							
	END HOLE at 6.1m -on existing road							

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COMPLETION DEPTH 6.1 m

COMPLETE 90/10/05

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SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		BOREHOLE No. 108-75				
SHAKWAK PROJECT		A/H KM 1931.9-1965.5		Project No: SEGMENT 18				
DRILL: B61 150mm Dia. SOLID STEM AUGER		LOCATION: STA 1945+175 o/s 2m Rt. <i>SEE PLANS</i>		ELEVATION 0.000 (m)				
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO.	▲ PERCENT FINES ▲		USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.			
0.0	CRUSHED GRAVEL -road fill			20	40	60	80	0.0
1.0	GRAVEL -pitrun fill -damp -grindy drilling							1.0
2.0	-water below 1.5m ORGANIC MATERIAL -silt layers -easier drilling							2.0
3.0	SILT (ML) -gray -some organics -tighter drilling	<input checked="" type="checkbox"/>	171					3.0
4.0	-frozen below 3.3m ORGANIC MATERIAL -frozen							4.0
5.0	ORGANIC SANDY SILT -wet to saturated	<input checked="" type="checkbox"/>	172					5.0
6.0	GRAVELLY SAND -brown-gray -saturated -grindy easy drilling							6.0
	END HOLE at 6.1m -on existing road							

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COMPLETION DEPTH 6.1 m

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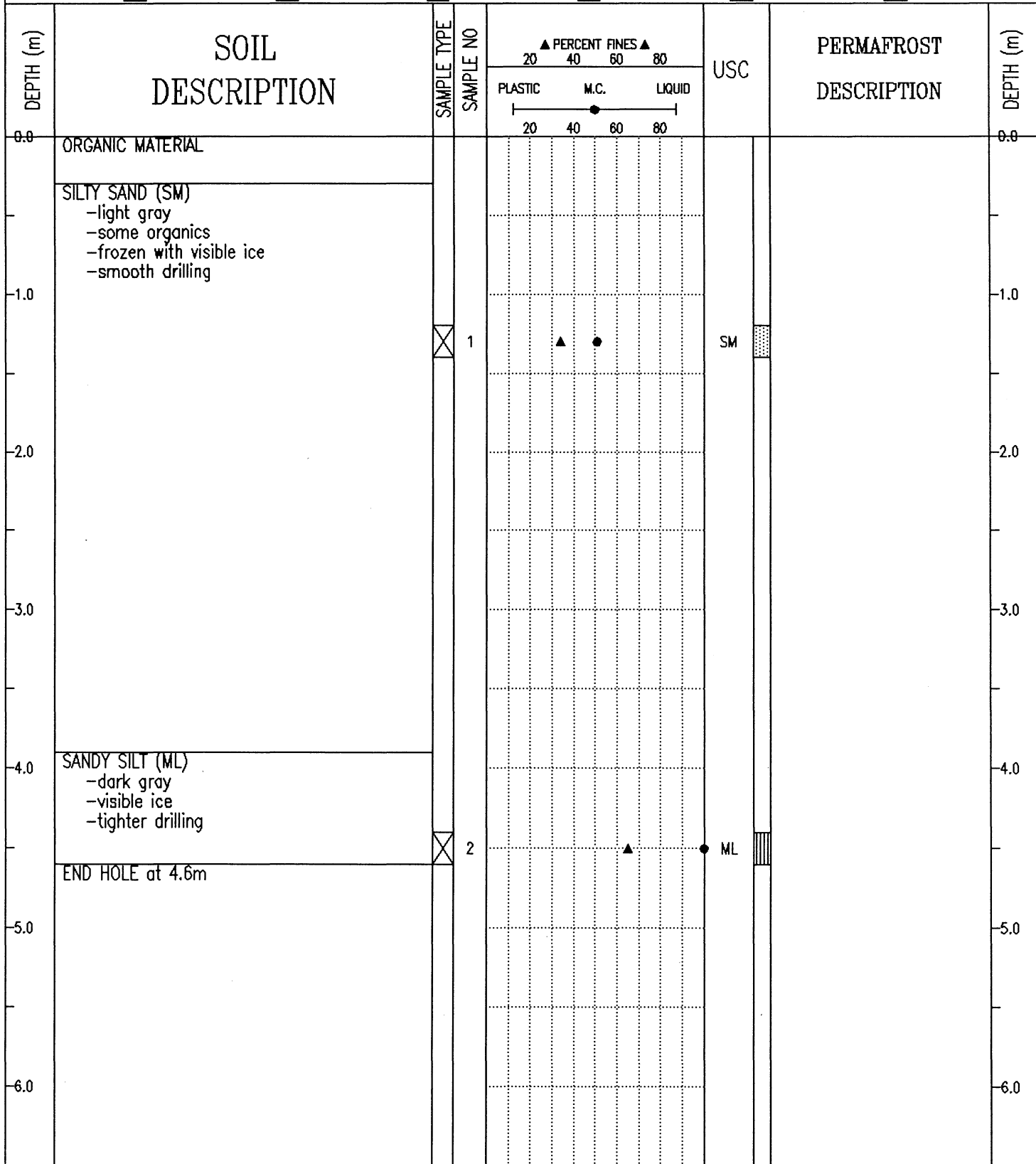
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SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-76
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1945+375 o/s 3m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

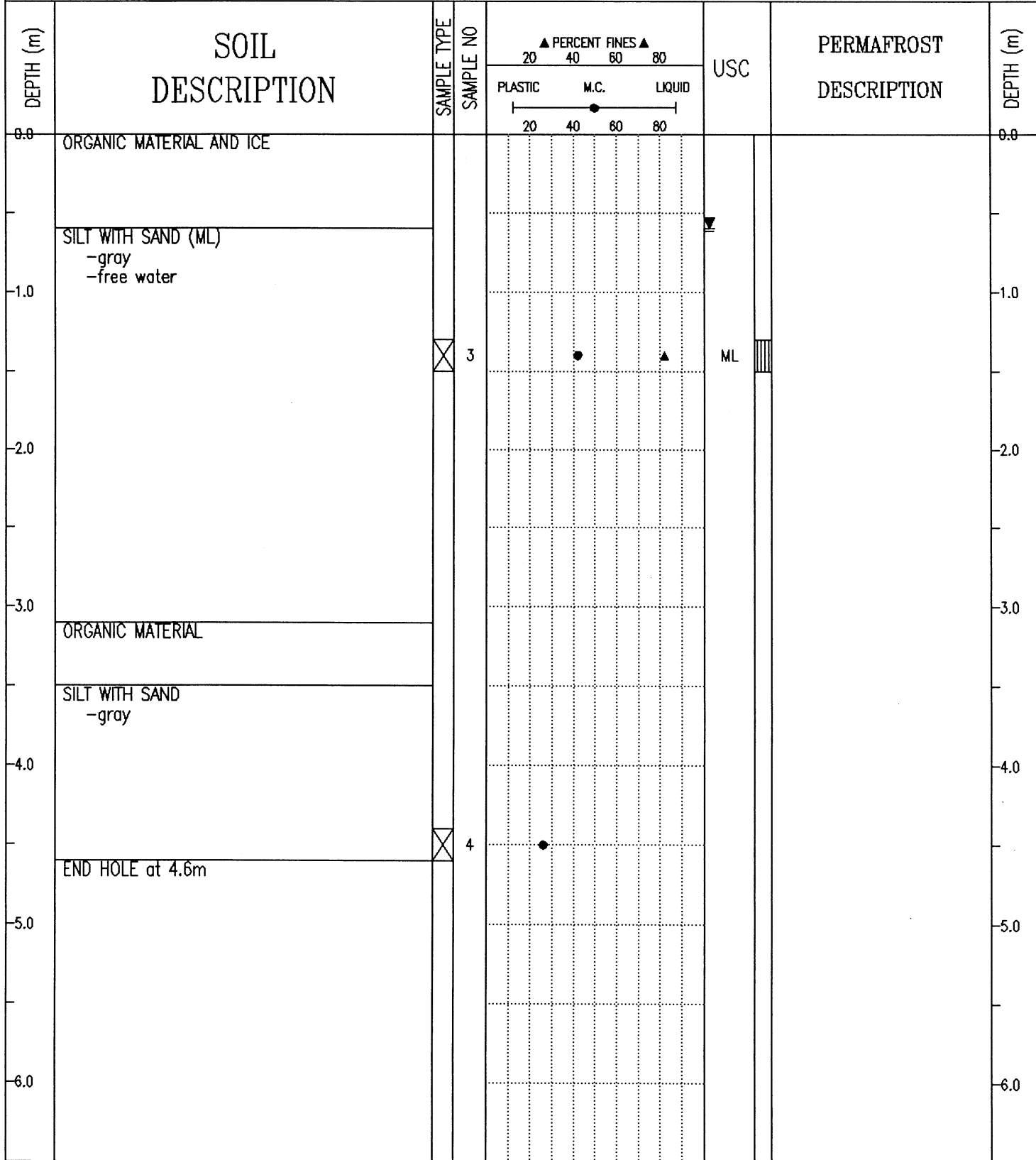
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	CRUSHED GRAVEL -road fill							0.0	
	GRAVEL -pitrun fill -grindy drilling								
	ORGANIC MATERIAL -black -moist -easy drilling								
	SILTY SAND -gray -wet								
	ORGANIC SILT (ML) -gray -wet -frozen below 2.0m, ice crystals -tight drilling								
		<input checked="" type="checkbox"/>	173				ML		
	ORGANIC SAND -frozen								
		<input checked="" type="checkbox"/>	174						
	-ice crystals below 4.4m								
	-wet to saturated below 4.9m								
	GRAVELLY SAND -gray -saturated								
		<input checked="" type="checkbox"/>	175						
	END HOLE at 6.1m -on existing road								

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY RECONSTRUCTION	BOREHOLE No. 127-01
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: 1945+650	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY RECONSTRUCTION	BOREHOLE No. 127-02
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: 1945+750	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



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COMPLETION DEPTH 4.6 m

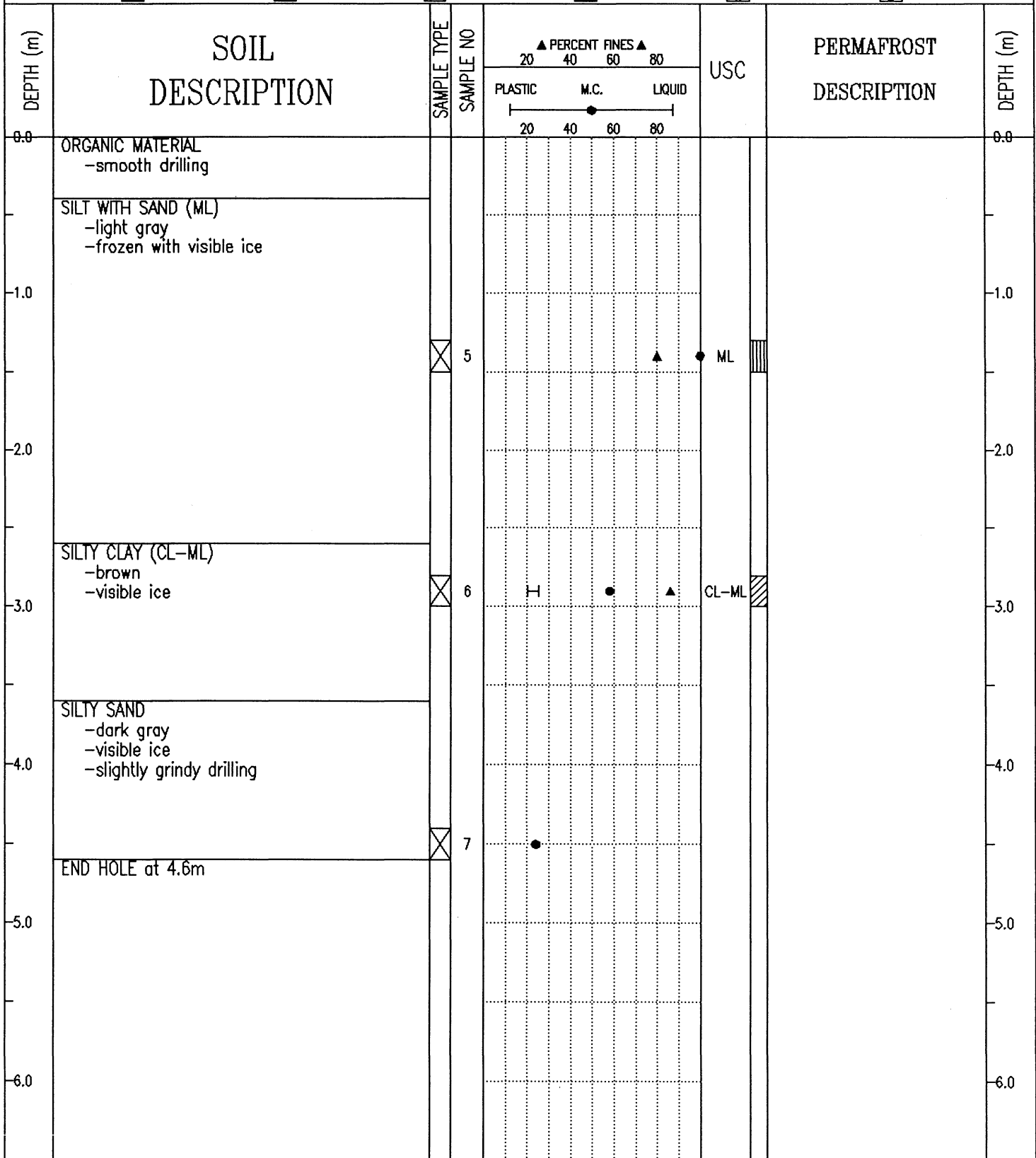
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SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY RECONSTRUCTION	BOREHOLE No. 127-03
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: 1945+850	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



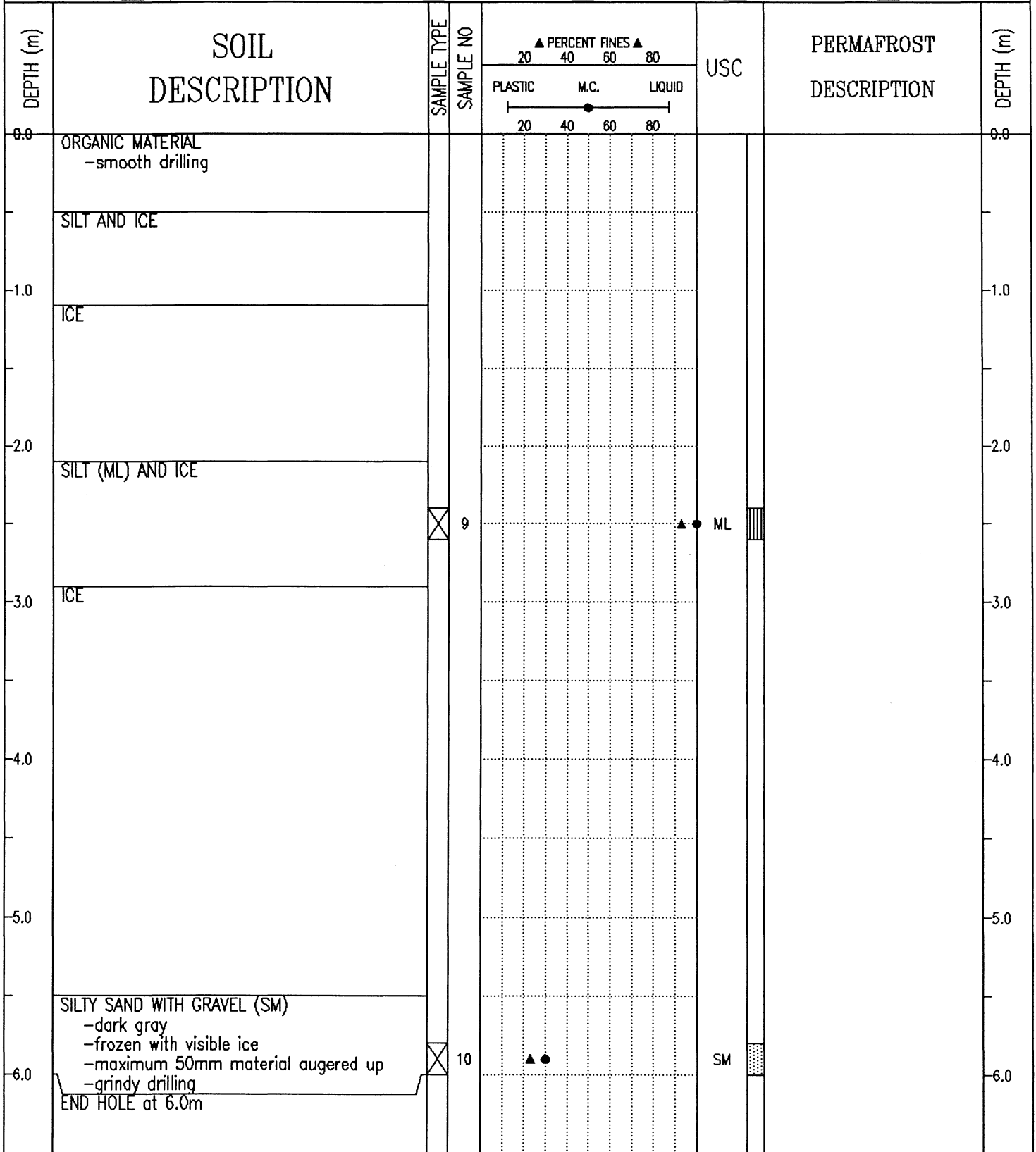
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SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: 1945+950	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL -frozen							0.0	
1.0								1.0	
1.8	SILTY SAND (SM) -dark gray -trace organic -free water	<input checked="" type="checkbox"/>	8				SM	1.8	
2.0								2.0	
3.0								3.0	
4.0								4.0	
4.6	END HOLE at 4.6m							4.6	
5.0								5.0	
6.0								6.0	

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COMPLETION DEPTH 4.6 m	COMPLETE 91/03/19
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SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY RECONSTRUCTION	BOREHOLE No. 127-05
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: 1946+075	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



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COMPLETION DEPTH 6.0 m

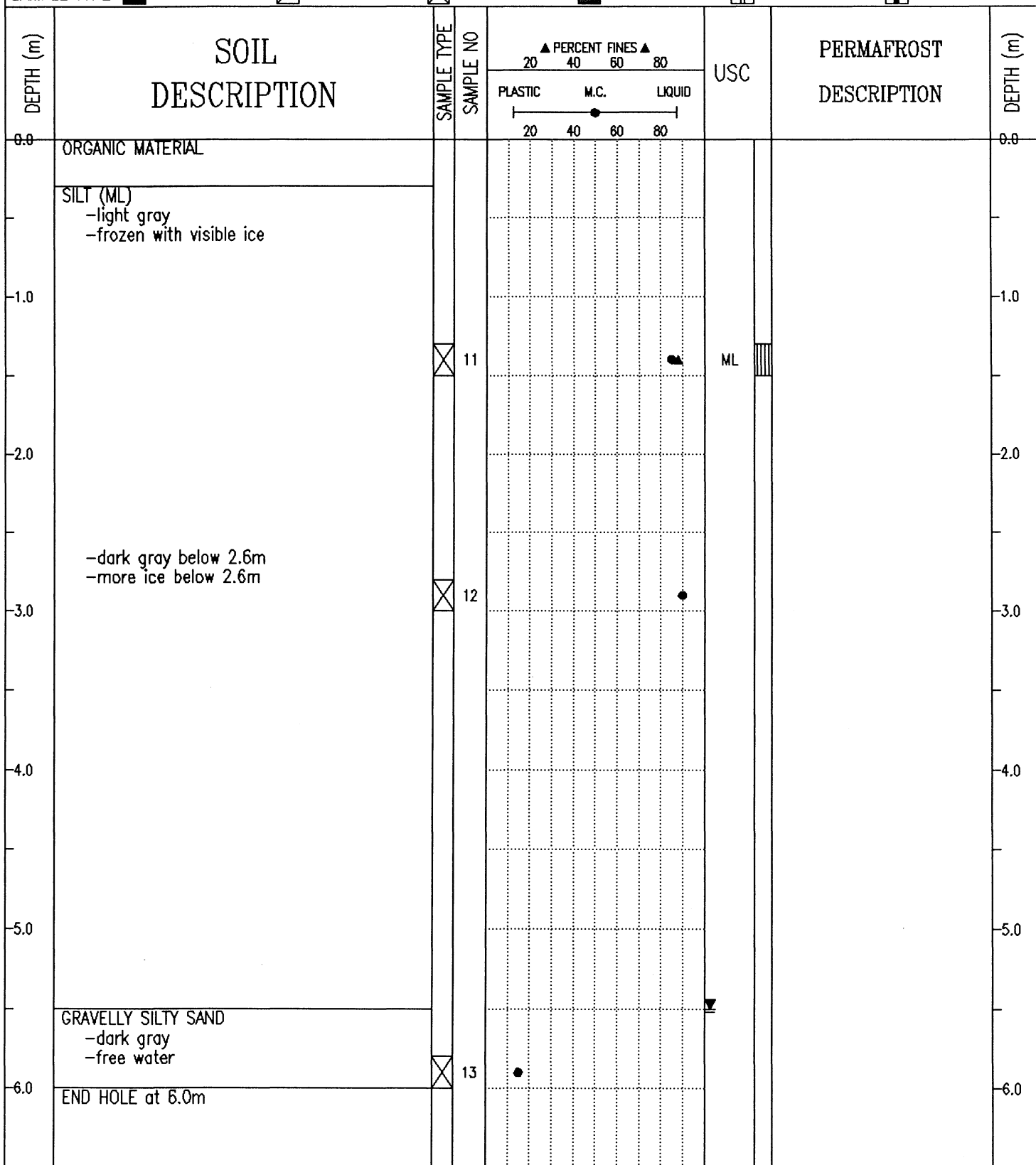
COMPLETE 91/03/19

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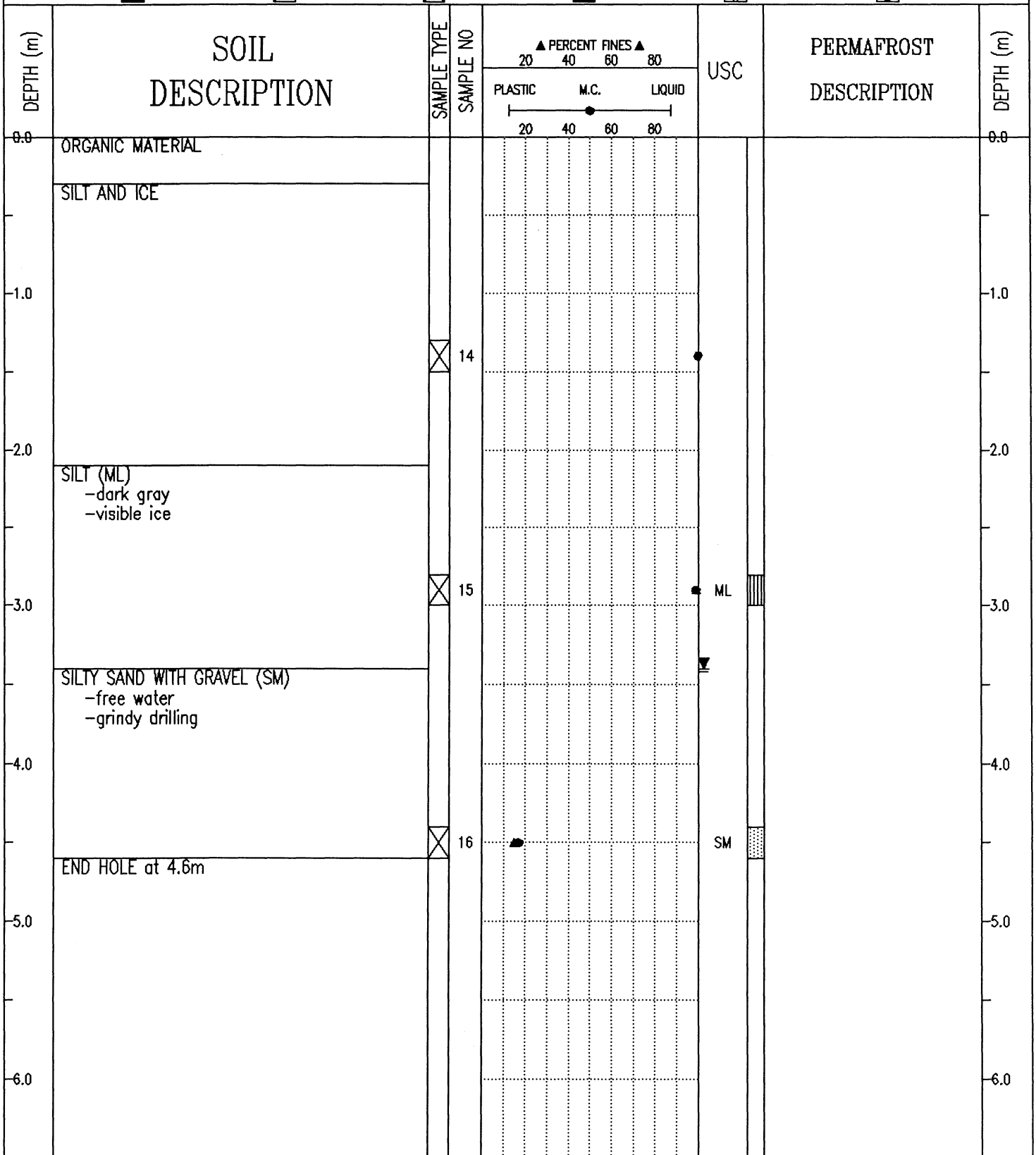
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SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY RECONSTRUCTION	BOREHOLE No. 127-06
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: 1946+300	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

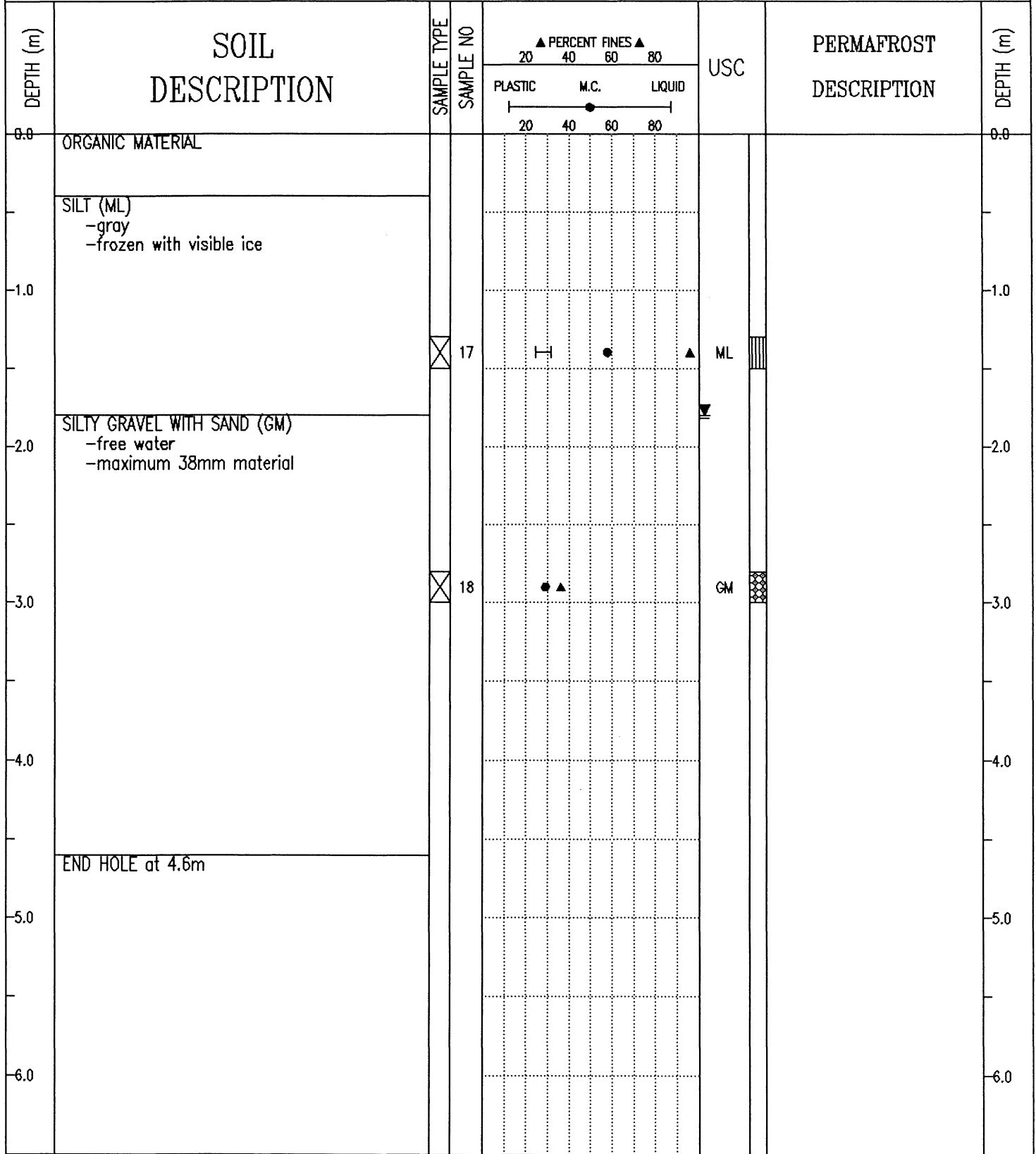


SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY RECONSTRUCTION	BOREHOLE No. 127-07
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: 1946+450	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



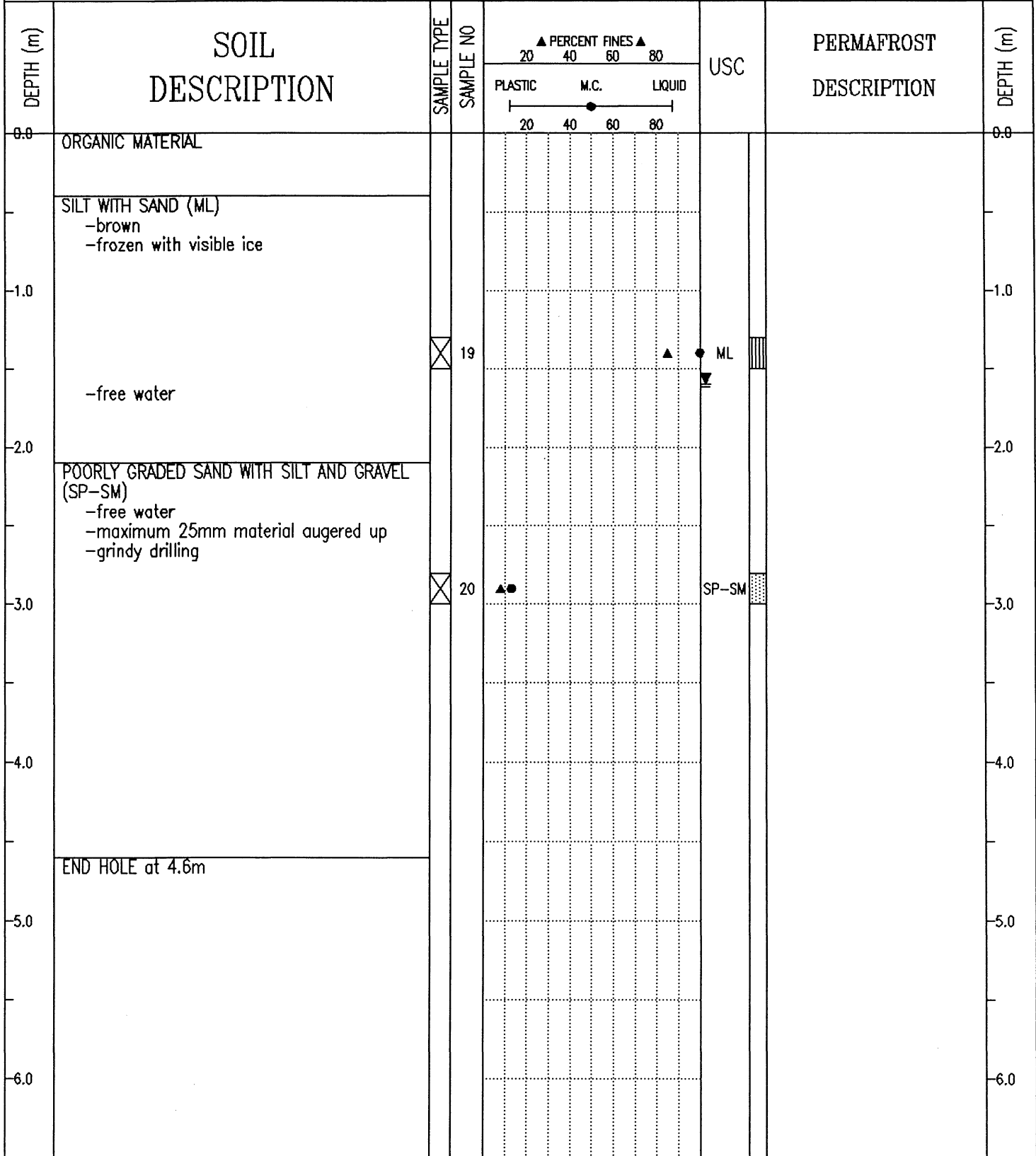
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY RECONSTRUCTION	BOREHOLE No. 127-08
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: 1946+600	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



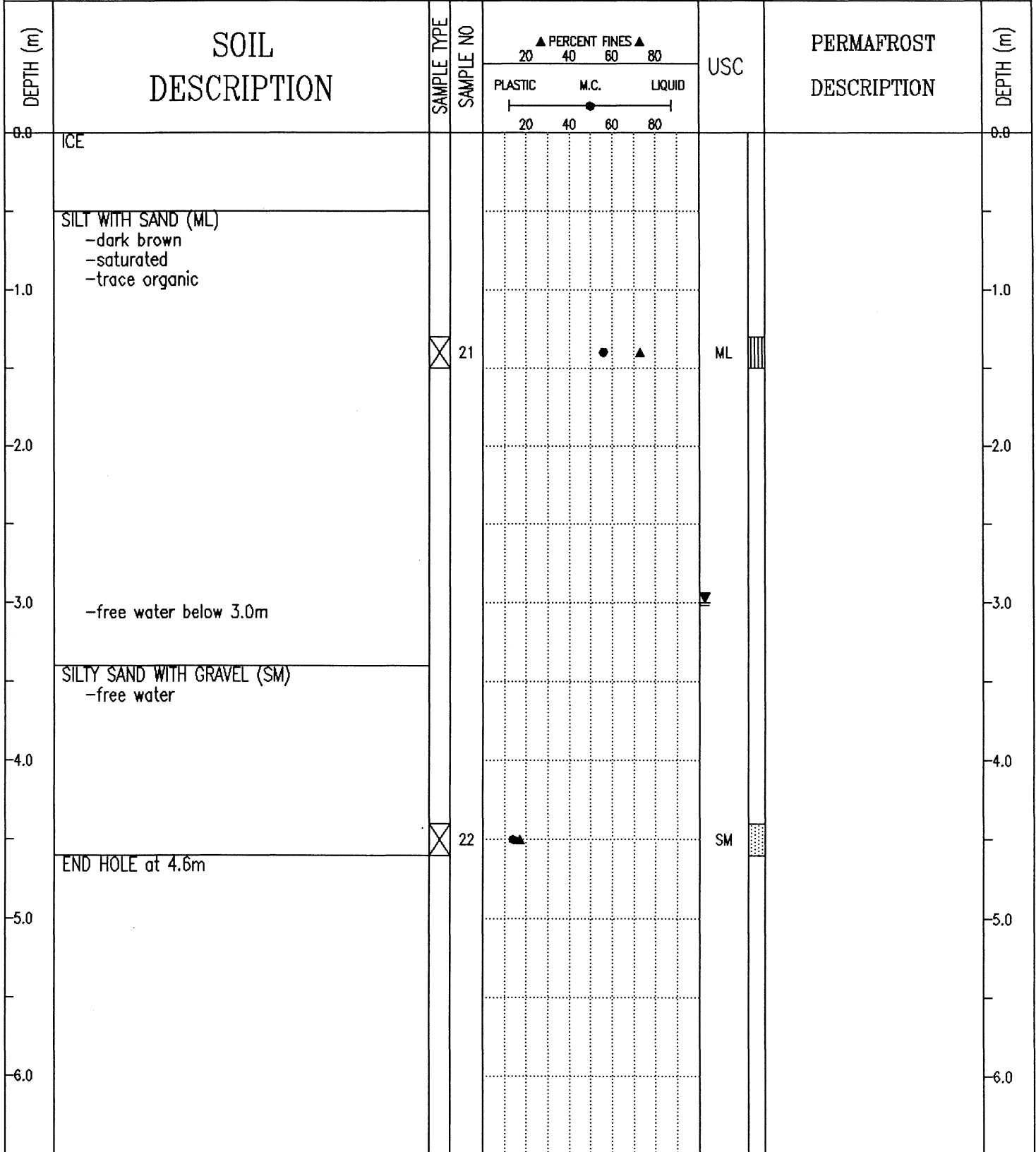
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY RECONSTRUCTION	BOREHOLE No. 127-09
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: 1946+750	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY RECONSTRUCTION	BOREHOLE No. 127-10
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: 1946+900	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



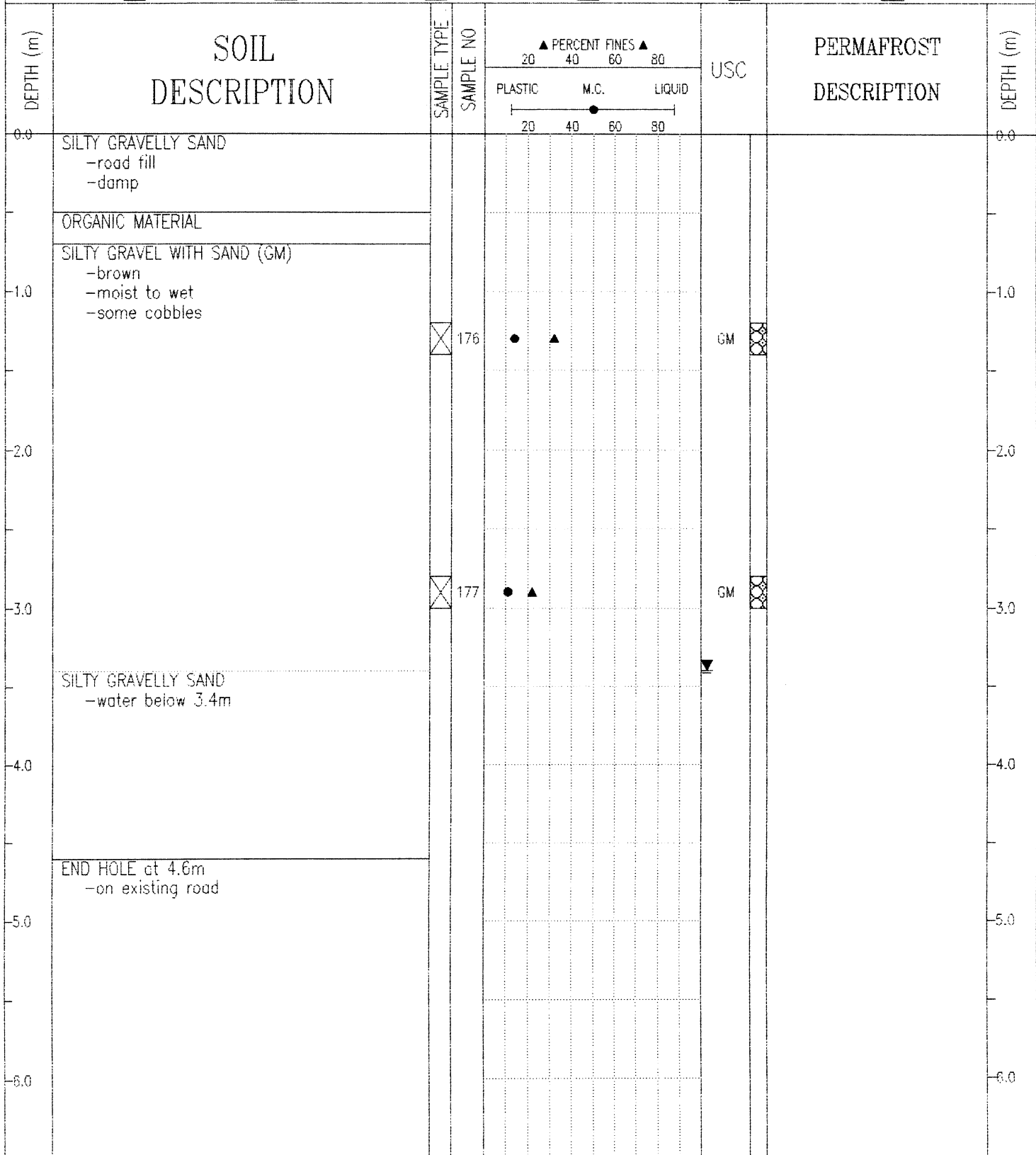
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-167
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1947+500 o/s 70m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	DECOMPOSED ROCK -damp -grindy, jumpy drilling								0.0
1.0									1.0
2.0									2.0
3.0	END HOLE at 3.0m -in existing road		317						3.0
4.0									4.0
5.0									5.0
6.0									6.0

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-166
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1947+500 o/s 140m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	SILT -organics -moist -easy drilling								0.0
1.0									1.0
2.0	DECOMPOSED ROCK -water below 1.4m -grindy drilling								2.0
3.0									3.0
4.0									4.0
5.0	END HOLE at 4.6m -in existing road	<input checked="" type="checkbox"/>	316						5.0
6.0									6.0

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-77
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1947+525 o/s 3m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		BOREHOLE No. 108-78				
SHAKWAK PROJECT		A/H KM 1931.9-1965.5		Project No: SEGMENT 18				
DRILL: B61 150mm Dia. SOLID STEM AUGER		LOCATION: STA 1947+640 o/s 4m Rt.		ELEVATION 0.000 (m)				
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲		USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.			
0.0	WELL-GRADED GRAVEL (GW) -decomposed rock			20	40	60	80	0.0
1.0		<input checked="" type="checkbox"/>	178					1.0
1.2	END HOLE at 1.2m -refusal -in rock cut ditch							1.2
2.0								2.0
3.0								3.0
4.0								4.0
5.0								5.0
6.0								6.0
Public Works Canada Whitehorse, Yukon Territory.				COMPLETION DEPTH 1.2 m		COMPLETE 90/10/05		
				LOGGED BY JM		DWG NO.		Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-168
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1947+725 o/s 6m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	DECOMPOSED ROCK							0.0	
	ROCK -dry -very hard drilling								
1.0		<input checked="" type="checkbox"/>	318					1.0	
	END HOLE at 1.3m -refusal -in ditch in existing rock cut								
2.0								2.0	
3.0								3.0	
4.0								4.0	
5.0								5.0	
6.0								6.0	

SUBSURFACE EXPLORATION AND TEST REPORT ALASKA HIGHWAY PRE-ENGINEERING BOREHOLE No. 108-79

SHAKWAK PROJECT A/H KM 1931.9-1965.5 Project No: SEGMENT 18

DRILL: B61 150mm Dia. SOLID STEM AUGER LOCATION: STA 1947+750 o/s 7m Rt. ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	DECOMPOSED ROCK							0.0	
0.5	END HOLE at 0.5m -refusal -in rock cut ditch							0.5	
1.0								1.0	
2.0								2.0	
3.0								3.0	
4.0								4.0	
5.0								5.0	
6.0								6.0	

Public Works Canada  
Whitehorse, Yukon Territory.

COMPLETION DEPTH 0.5 m COMPLETE 90/10/05  
LOGGED BY JM DWG NO. Page 1 of 1

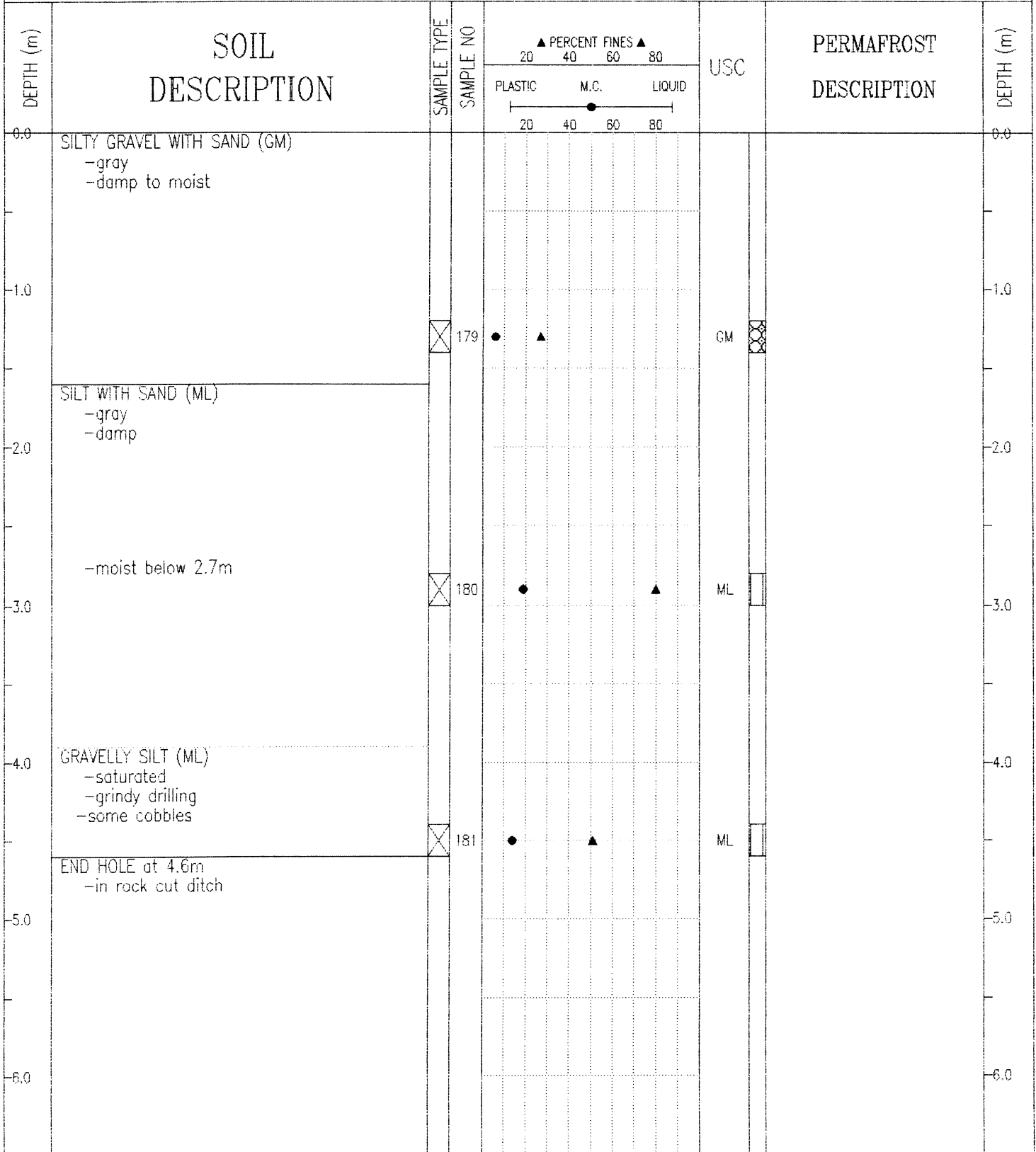
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-80
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1947+825 o/s 12m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	DECOMPOSED ROCK							0.0	
1.0	END HOLE at 1.0m -refusal -in rock cut ditch							1.0	
2.0								2.0	
3.0								3.0	
4.0								4.0	
5.0								5.0	
6.0								6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-169
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1947+940 o/s 40m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	SILT							0.0	
	SILTY GRAVEL WITH SAND (GM) -brown -damp -grindy drilling								
-1.0								-1.0	
		<input checked="" type="checkbox"/>	319	●	▲		GM		
-2.0	END HOLE at 1.7m -refusal -boulders on surface							-2.0	
-3.0								-3.0	
-4.0								-4.0	
-5.0								-5.0	
-6.0								-6.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-81
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1947+950 o/s 15m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



Public Works Canada Whitehorse, Yukon Territory.	COMPLETION DEPTH 4.6 m	COMPLETE 90/10/05
	LOGGED BY JM	DWG NO.

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-170
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1948+000 o/s 40m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	DECOMPOSED ROCK								0.0
	ROCK -easy steady drilling								
-1.0	-hard drilling below 1.2m								-1.0
-2.0	-softer drilling below 2.1m		320						-2.0
-3.0	-hard and soft layers in rock below 2.7m								-3.0
-4.0									-4.0
-5.0									-5.0
-6.0	END HOLE at 5.8m -refusal -in existing rock cut								-6.0

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY PRE-ENGINEERING		BOREHOLE No. 108-82				
SHAKWAK PROJECT		A/H KM 1931.9-1965.5		Project No: SEGMENT 18				
DRILL: B61 150mm Dia. SOLID STEM AUGER		LOCATION: STA 1948+050 o/s 9m Rt.		ELEVATION 0.000 (m)				
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE								
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲ 20 40 60 80		USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.			
0.0	DECOMPOSED ROCK			-----●-----  20 40 60 80				0.0
1.0	END HOLE at 1.0m -refusal -in rock cut ditch							1.0
2.0								2.0
3.0								3.0
4.0								4.0
5.0								5.0
6.0								6.0
Public Works Canada Whitehorse, Yukon Territory.				COMPLETION DEPTH 1.0 m		COMPLETE 90/10/05		
				LOGGED BY JM		DWG NO.		Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-171
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1948+060 o/s 8m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	DECOMPOSED ROCK							0.0	
0.0	ROCK -dry -hard and easy layers							0.0	
1.0								1.0	
2.0								2.0	
3.0								3.0	
4.0								4.0	
5.0								5.0	
6.0								6.0	
7.0								7.0	
8.0								8.0	
9.0	END HOLE at 9.1m -in ditch in existing rock cut							9.0	
10.0								10.0	

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-83
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1948+150	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	DECOMPOSED ROCK -road fill								0.0
1.0	-same but not road fill below 0.7m -harder drilling								1.0
1.2	END HOLE at 1.2m -in rock cut on road shoulder								1.2
2.0									2.0
3.0									3.0
4.0									4.0
5.0									5.0
6.0									6.0

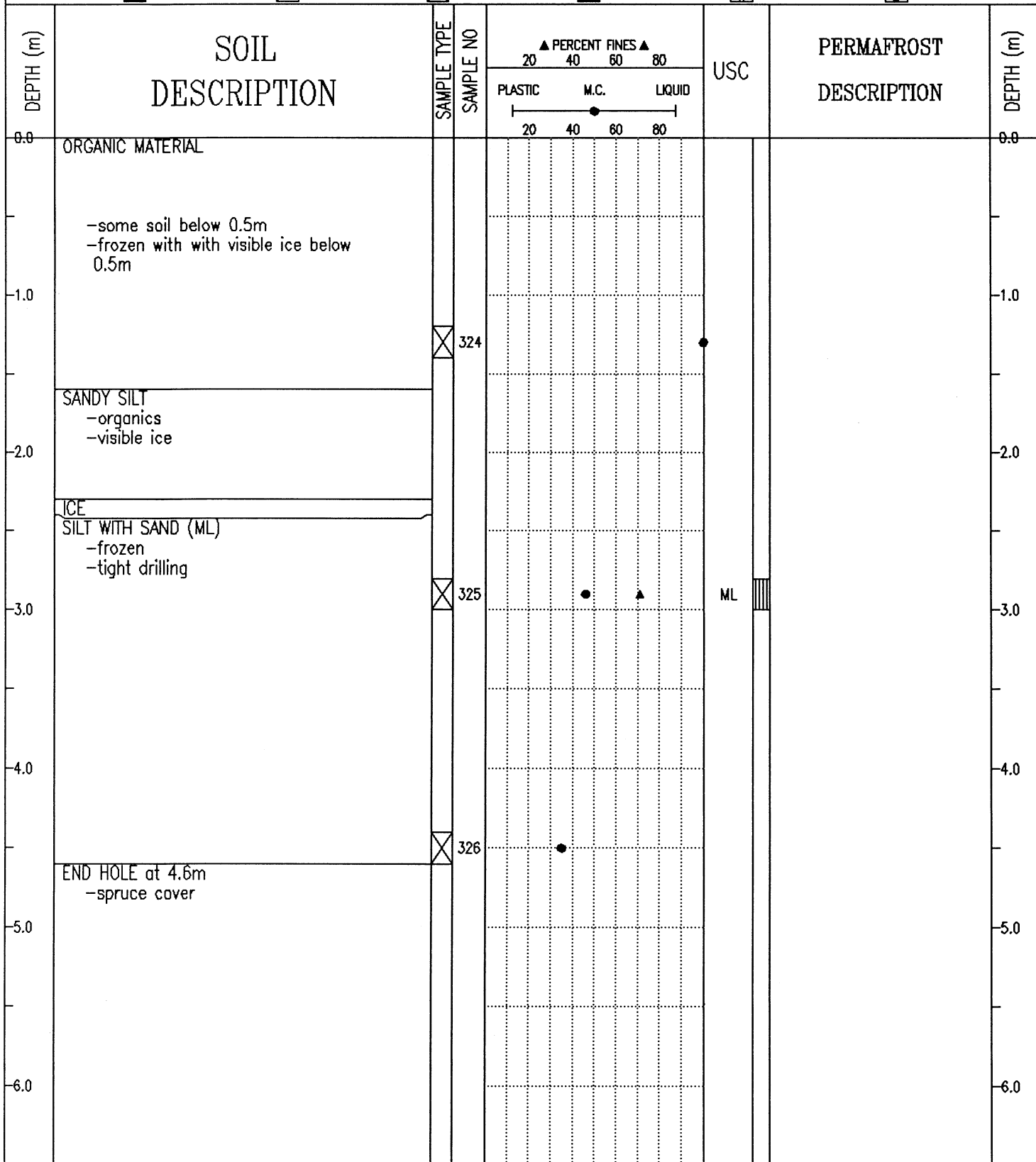
Public Works Canada Whitehorse, Yukon Territory.	COMPLETION DEPTH 1.2 m	COMPLETE 90/10/05
	LOGGED BY JM	DWG NO.

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-172
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1948+275	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL -black  -frozen below 0.6m -visible ice below 0.8m								0.0
1.0		<input checked="" type="checkbox"/>	321						1.0
2.0	SANDY SILT (ML) -brown -organics -visible ice 1.3m to 2.1m -tight drilling  -frozen, no ice below 2.1m -hard drilling -sample considerably disturbed								2.0
3.0		<input checked="" type="checkbox"/>	322	●	▲		ML		3.0
4.0	END HOLE at 4.0m -spruce and poplar cover	<input checked="" type="checkbox"/>	323	●					4.0
5.0									5.0
6.0									6.0

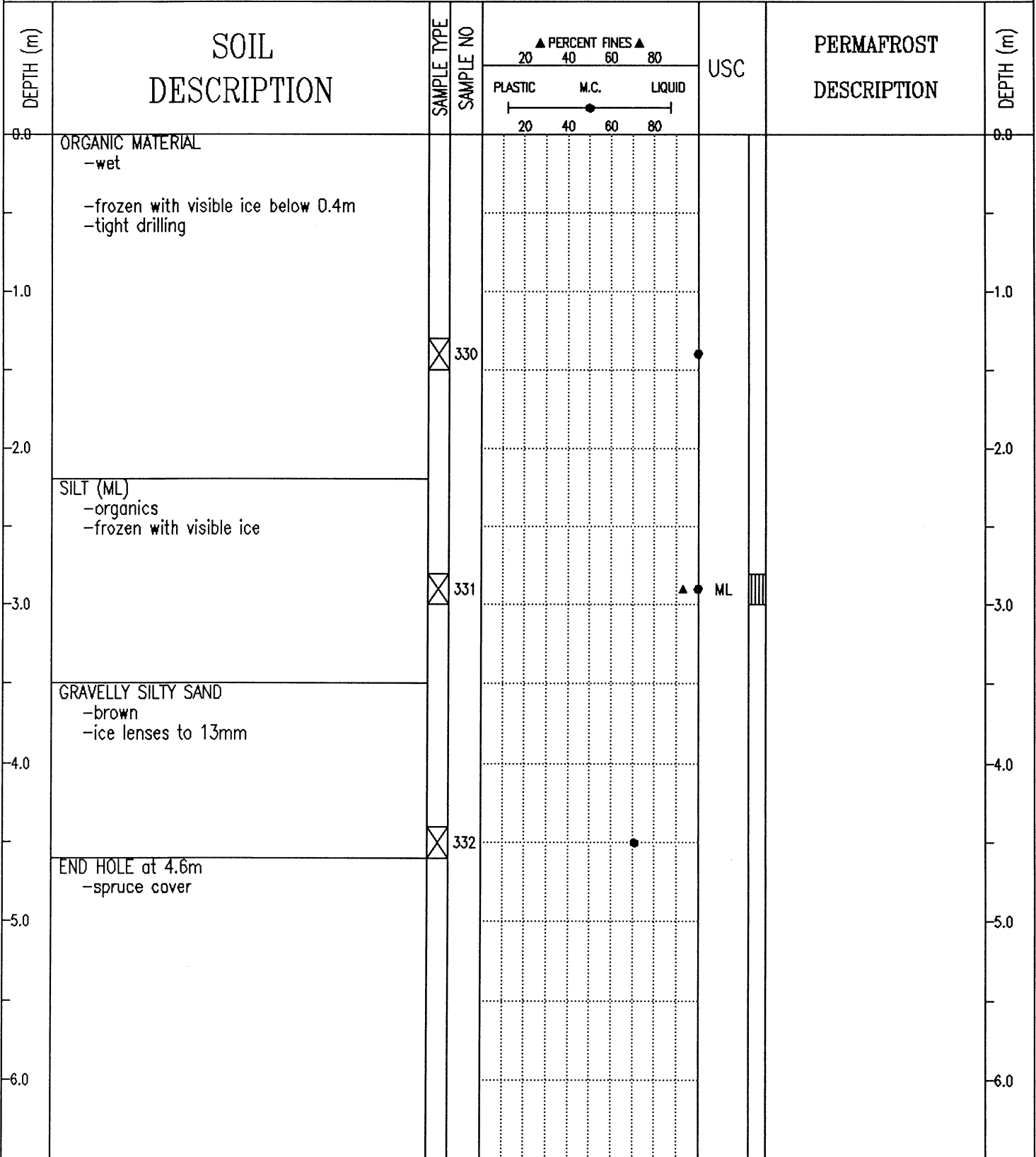
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-173
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1948+375	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-174
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1948+575	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

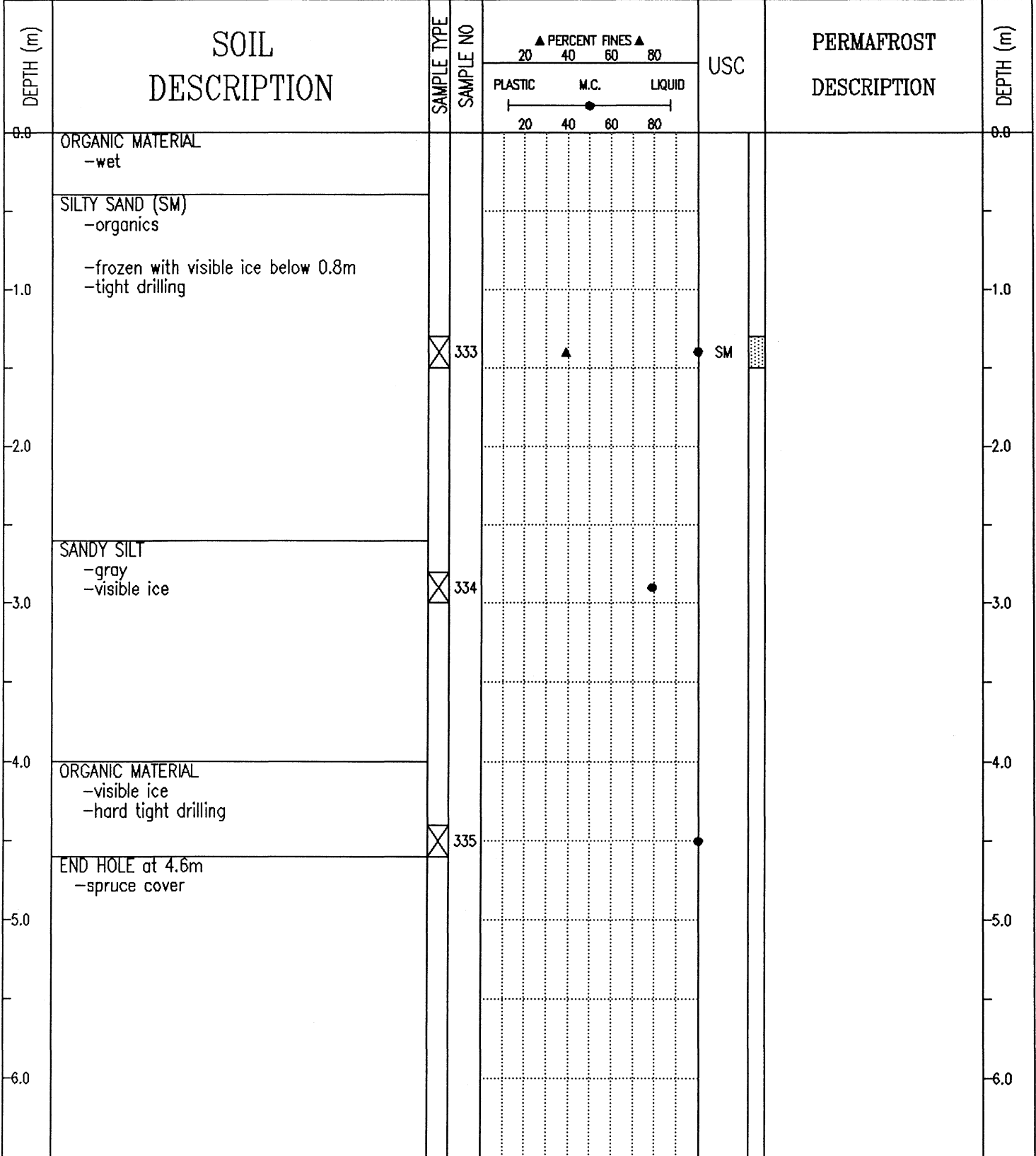
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERMAFROST DESCRIPTION	DEPTH (m)
				PLASTIC	M.C.	LIQUID			
0.0	ORGANIC MATERIAL -wet								0.0
	ICE -organics -some soil								
1.0	ORGANIC MATERIAL -visible ice -tight drilling								1.0
		<input checked="" type="checkbox"/>	327						
2.0									2.0
3.0		<input checked="" type="checkbox"/>	328						3.0
4.0	GRAVELLY SAND -brown -visible ice								4.0
	ICE								
	GRAVELLY SAND -brown -visible ice	<input checked="" type="checkbox"/>	329						
5.0	END HOLE at 4.6m -spruce cover								5.0
6.0									6.0

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-175
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1948+775	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

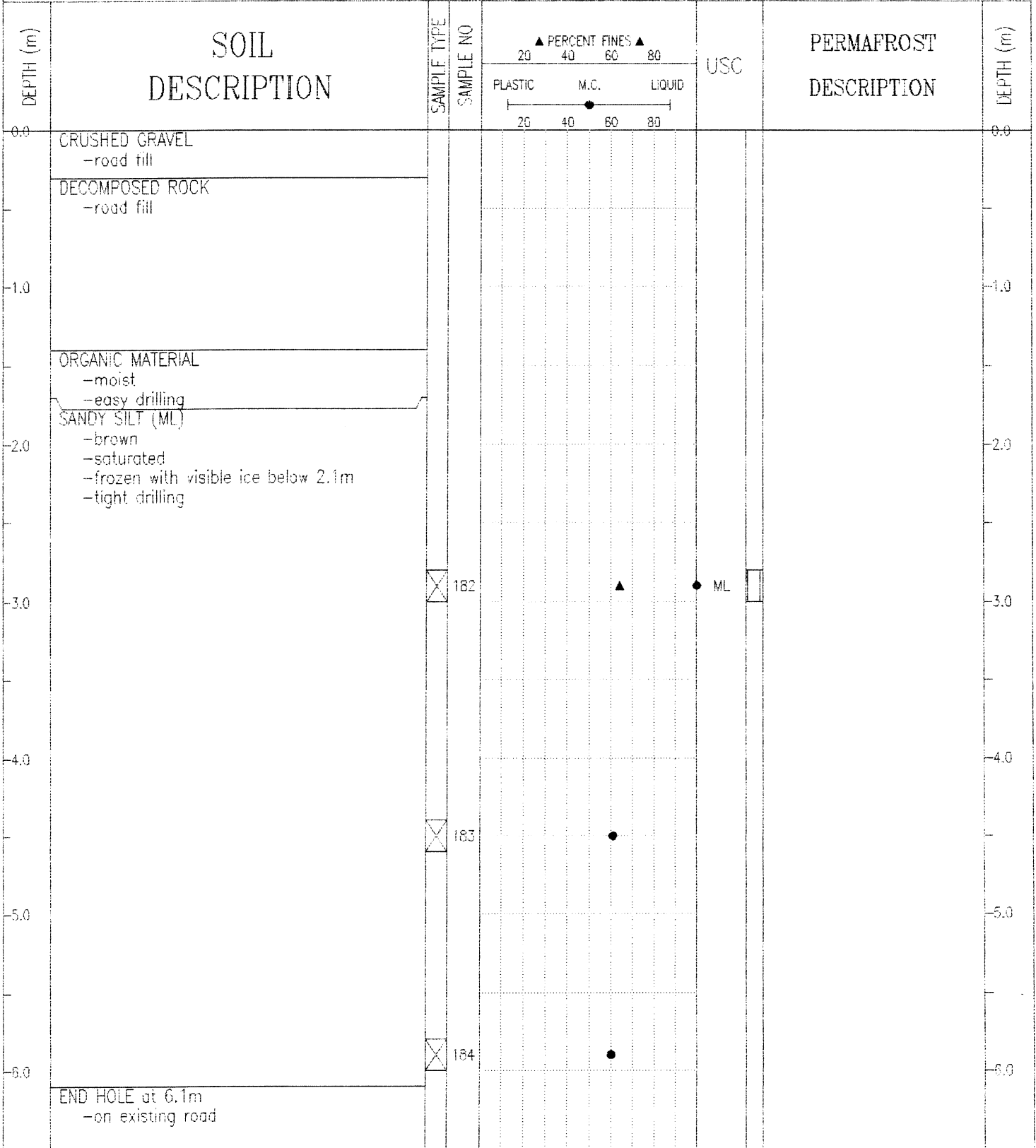


SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-176
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1948+895	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-84
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1949+025 o/s 2m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



Public Works Canada  
Whitehorse, Yukon Territory.

COMPLETION DEPTH 6.1 m

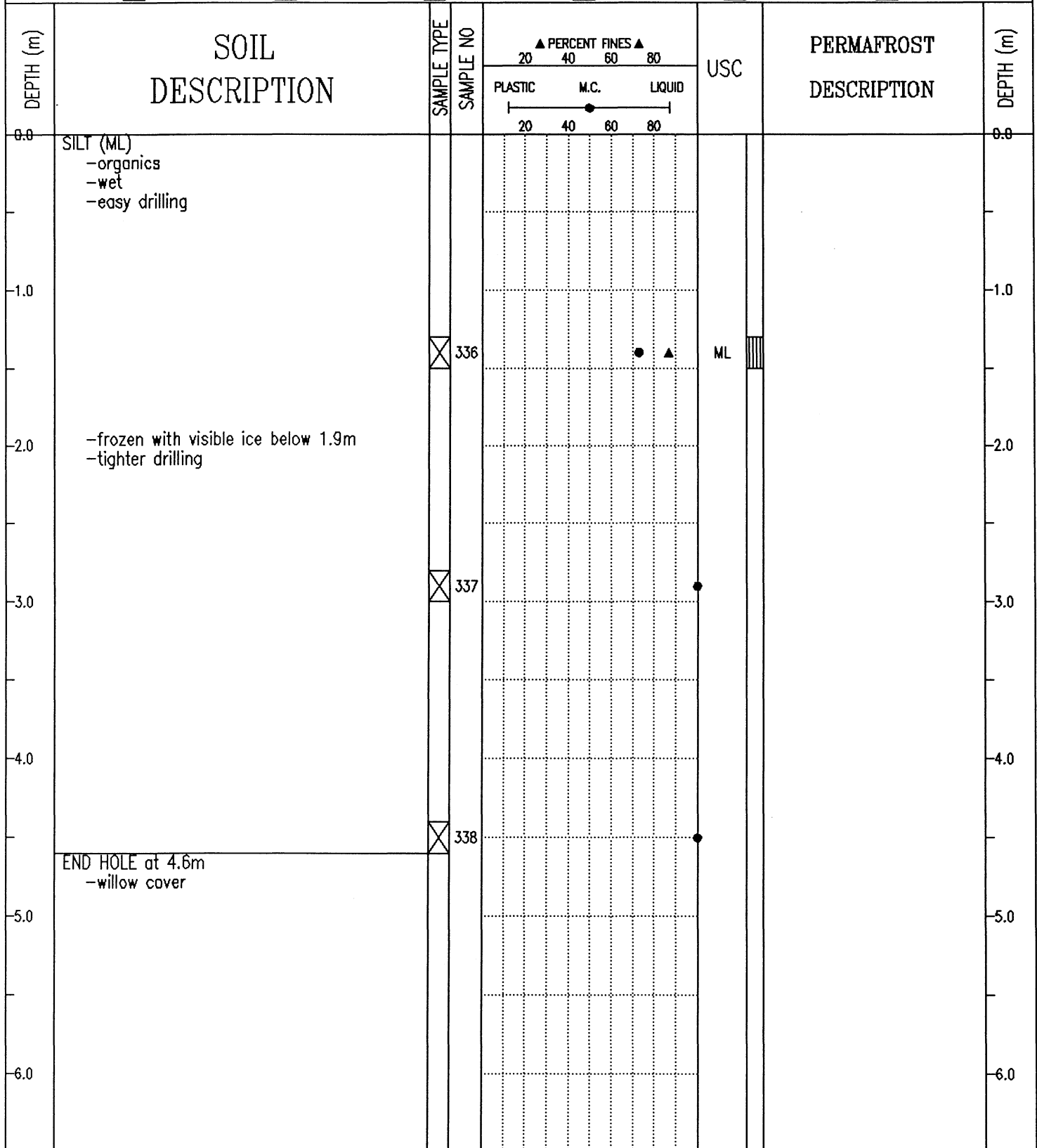
COMPLETE 90/10/05

LOGGED BY JM

DWG NO.

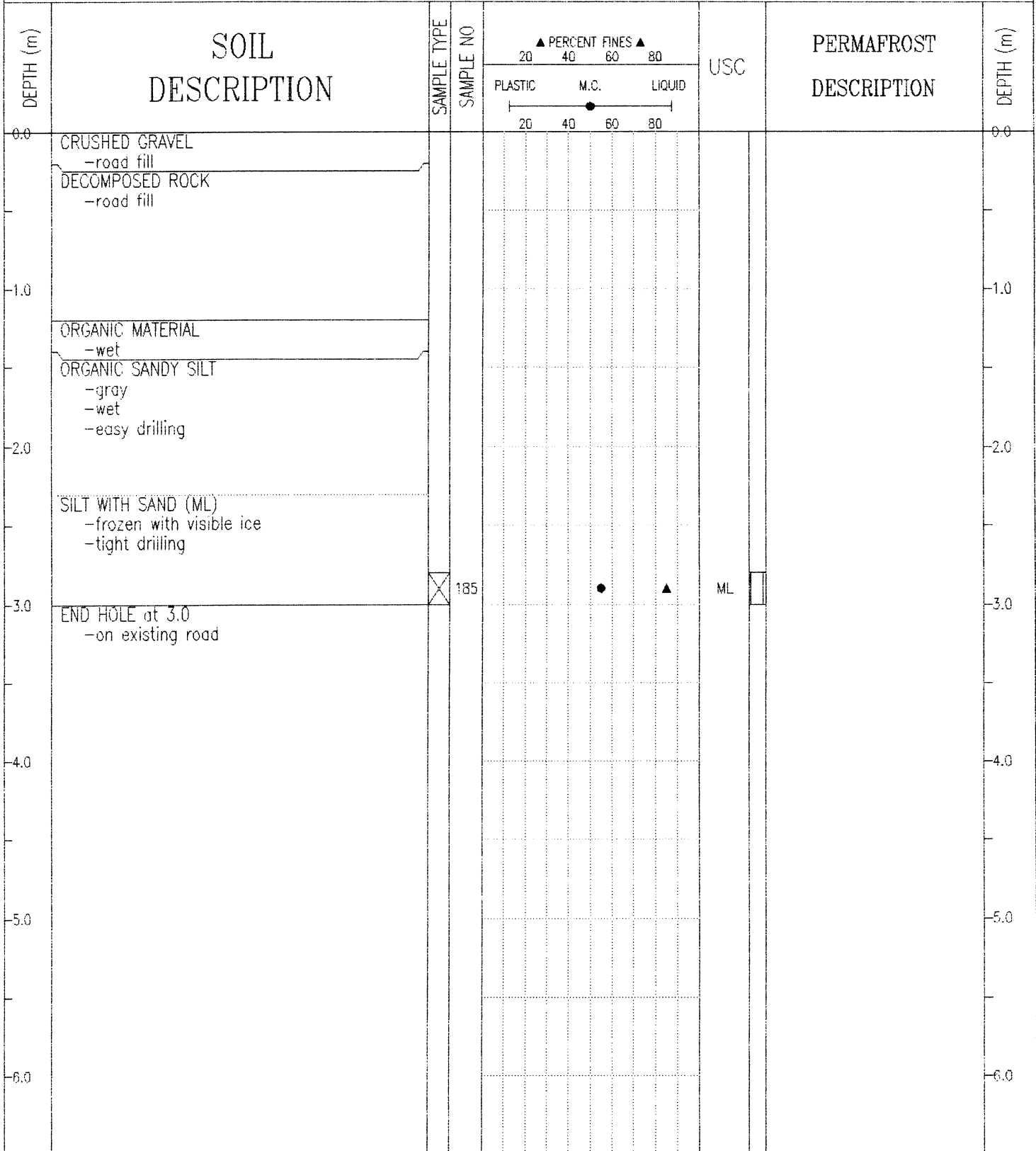
Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-177
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1949+025 o/s 7m Lt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



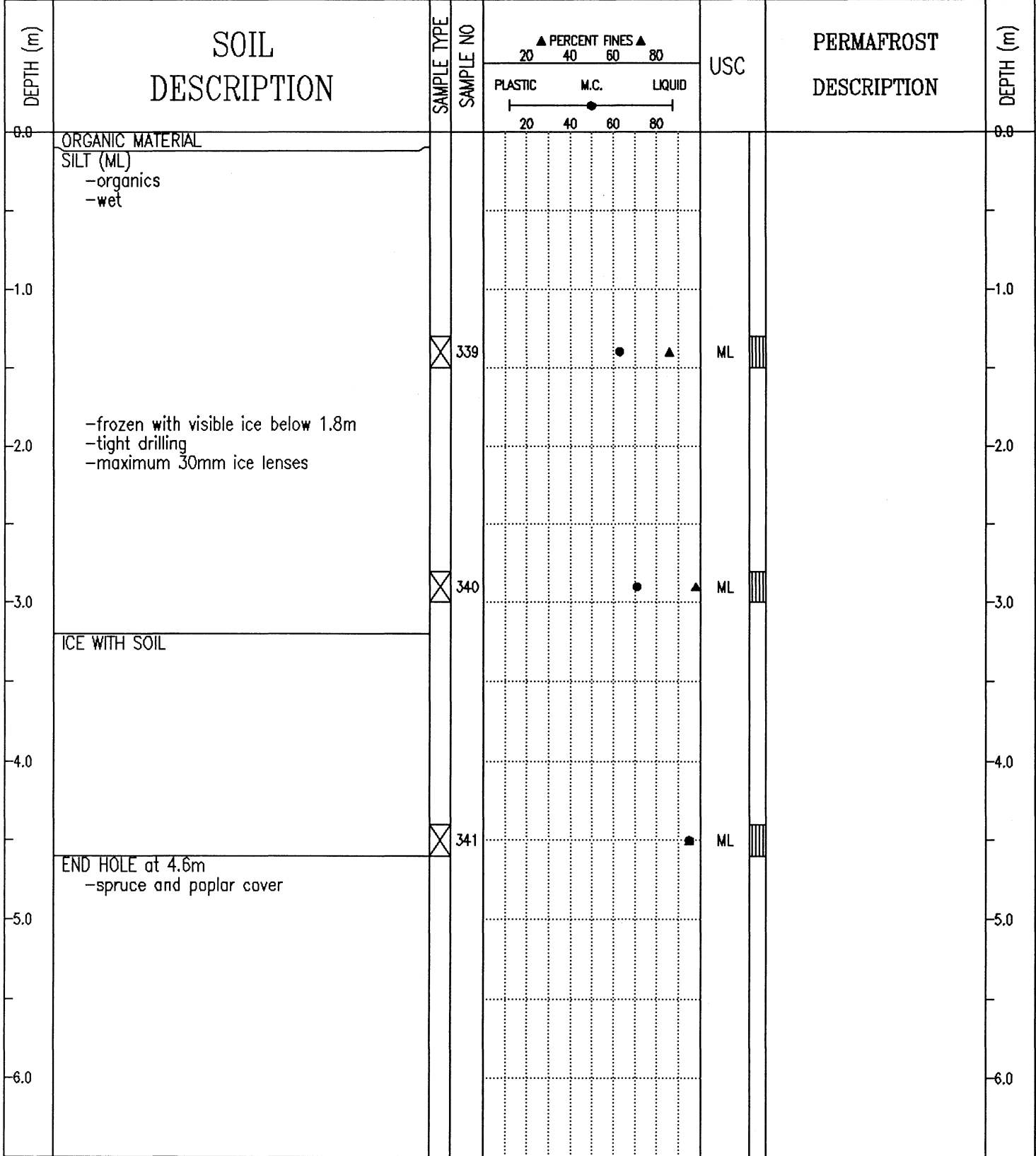
Public Works Canada Whitehorse, Yukon Territory.	COMPLETION DEPTH 4.6 m	COMPLETE 90/10/16
	LOGGED BY JM	DWG NO.

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-85
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1949+200 o/s 2m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-178
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1949+200 o/s 6m Lt.	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE

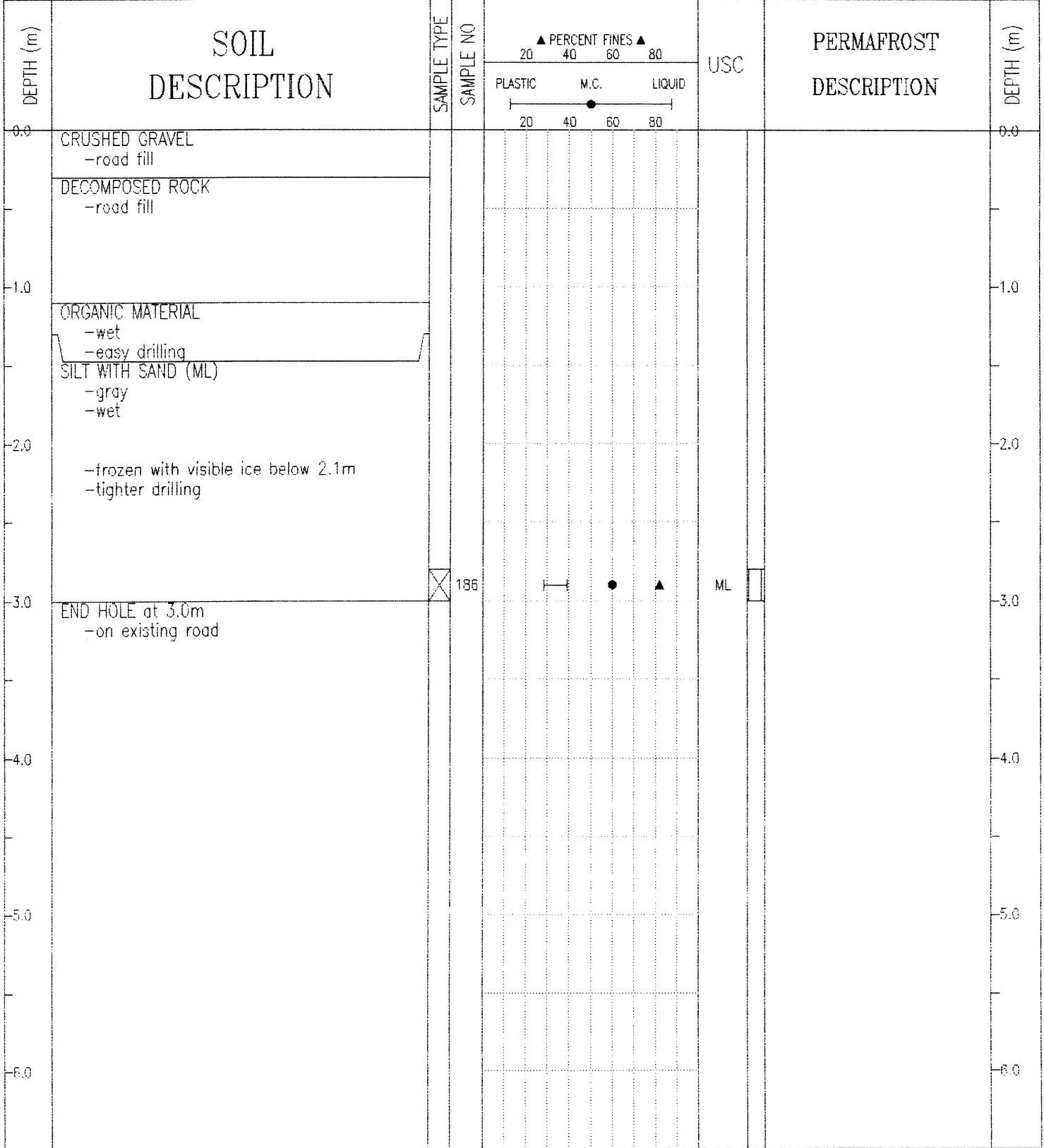


SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 108-86
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SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
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DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: STA 1949+425 o/s 1m Lt.	ELEVATION 0.000 (m)
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SAMPLE TYPE	<input type="checkbox"/> RETURN	<input checked="" type="checkbox"/> S.P.T.	<input checked="" type="checkbox"/> AUGER	<input type="checkbox"/> BULK	<input type="checkbox"/> TUBE	<input type="checkbox"/> CORE
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Public Works Canada  
Whitehorse, Yukon Territory.

COMPLETION DEPTH 3.0 m

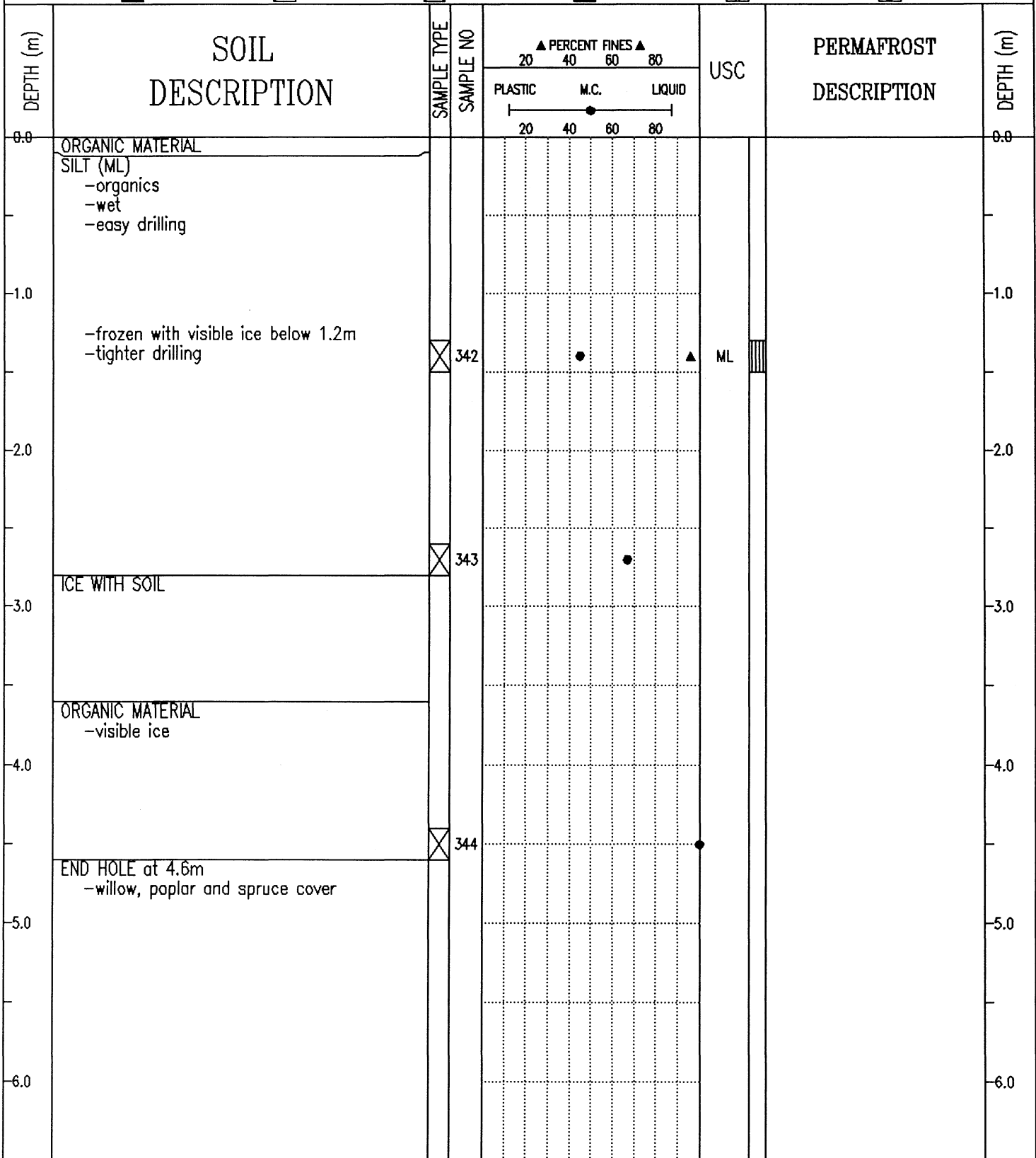
COMPLETE 90/10/05

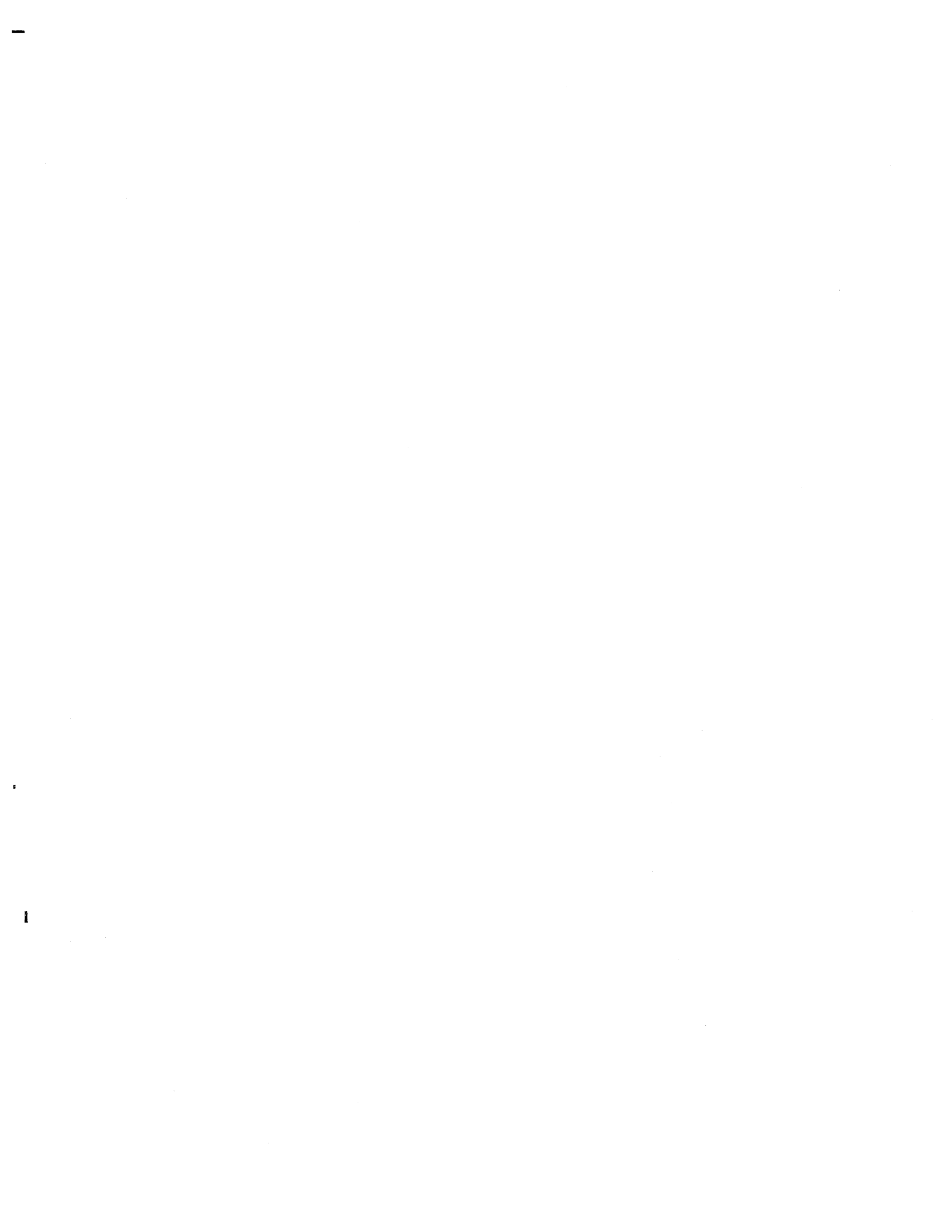
LOGGED BY JM

DWG NO.

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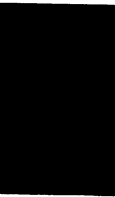
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY PRE-ENGINEERING	BOREHOLE No. 110-179
SHAKWAK PROJECT	A/H KM 1931.9-1965.5	Project No: SEGMENT 18
DRILL: B61 150mm Dia. SOLID STEM AUGER	LOCATION: 1949+433 o/s 10m Rt.	ELEVATION 0.000 (m)
SAMPLE TYPE <input checked="" type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input checked="" type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

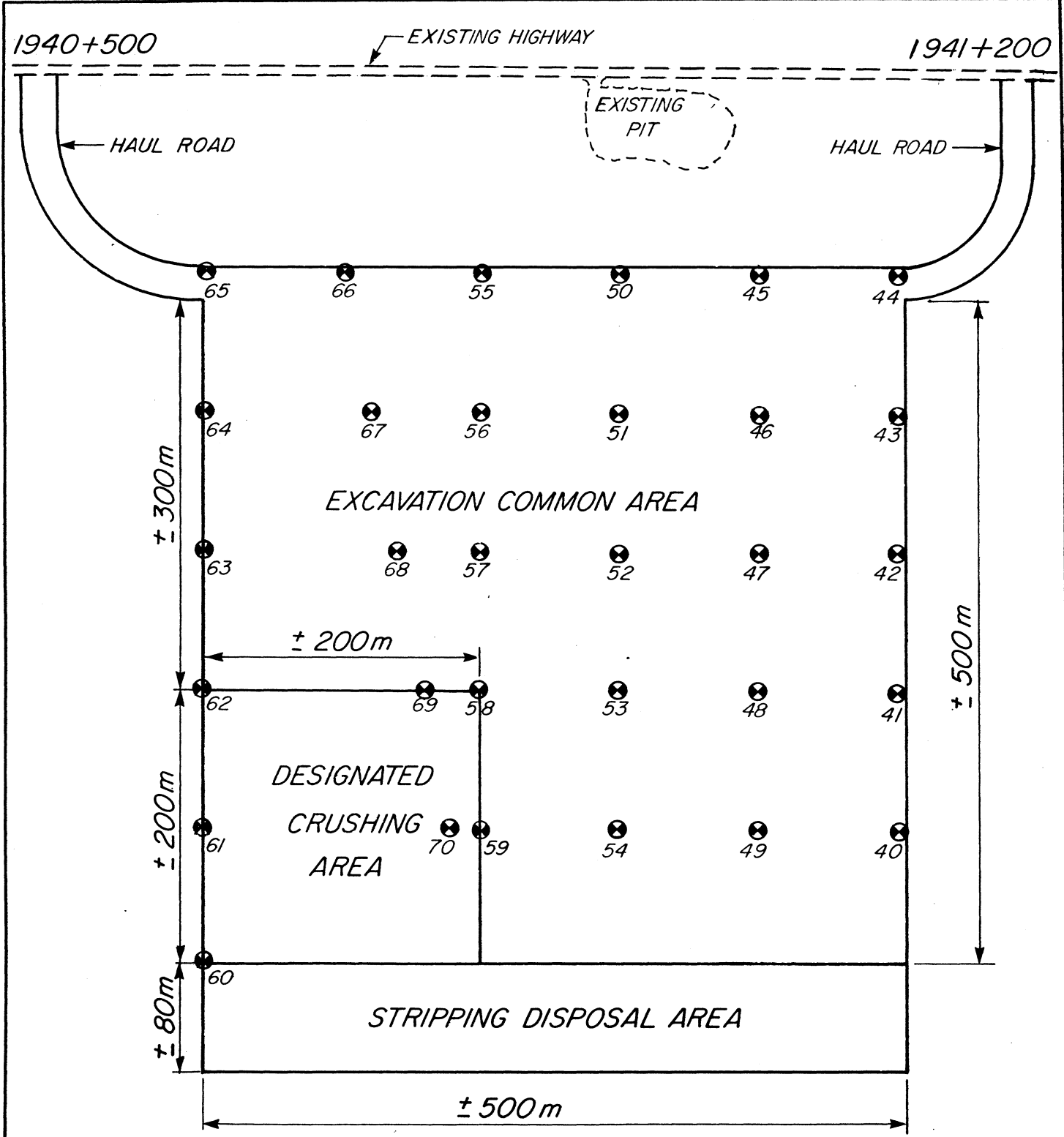




GEOTECHNICAL INVESTIGATION  
HIGHWAY CONSTRUCTION SHAKWAK PROJECT SEG. 18A  
km 1937.2 to km 1949.6, ALASKA HIGHWAY, Y.T.  
CENTRELINE & GRANULAR TESTING

## GRANULAR TESTING

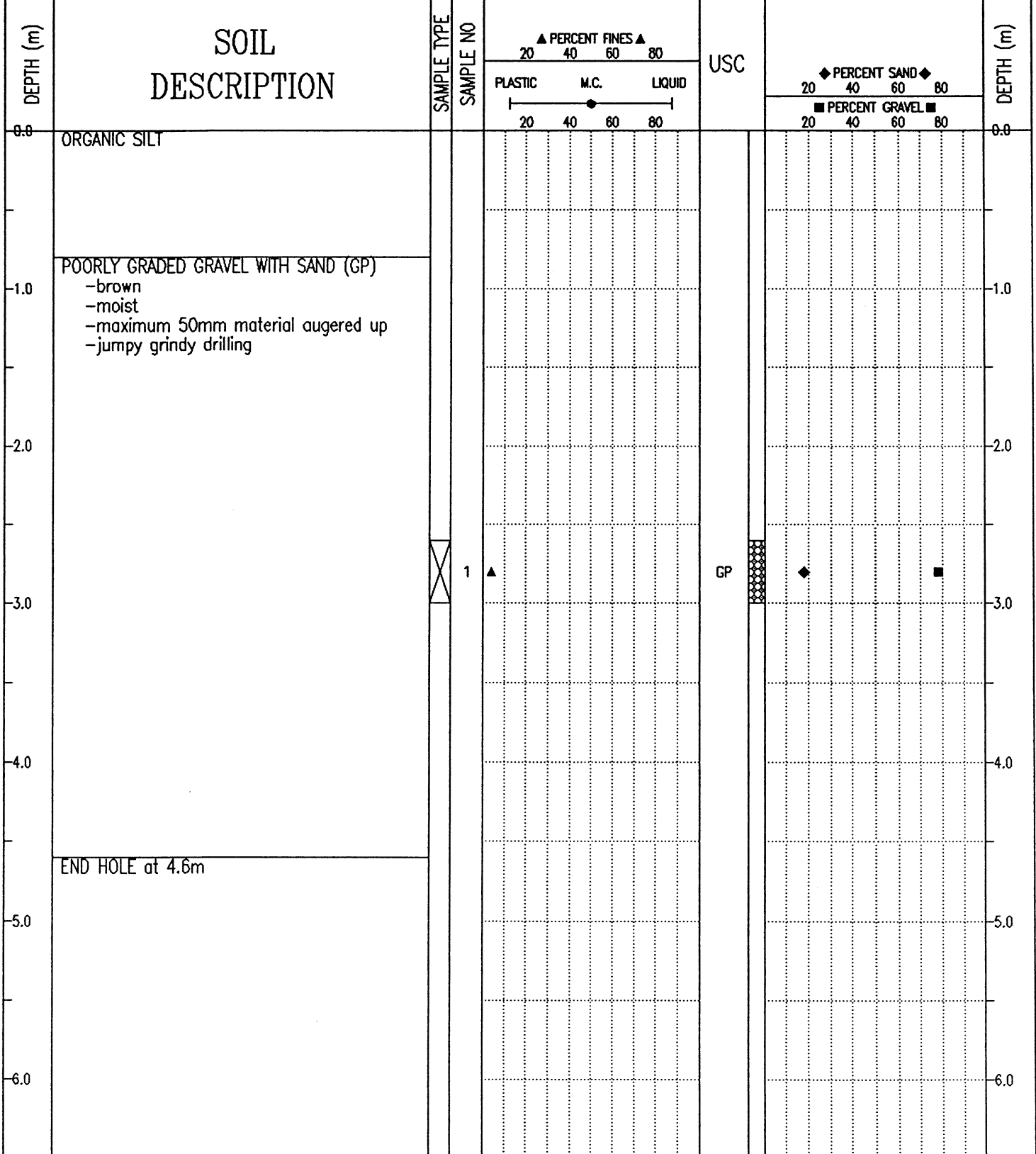




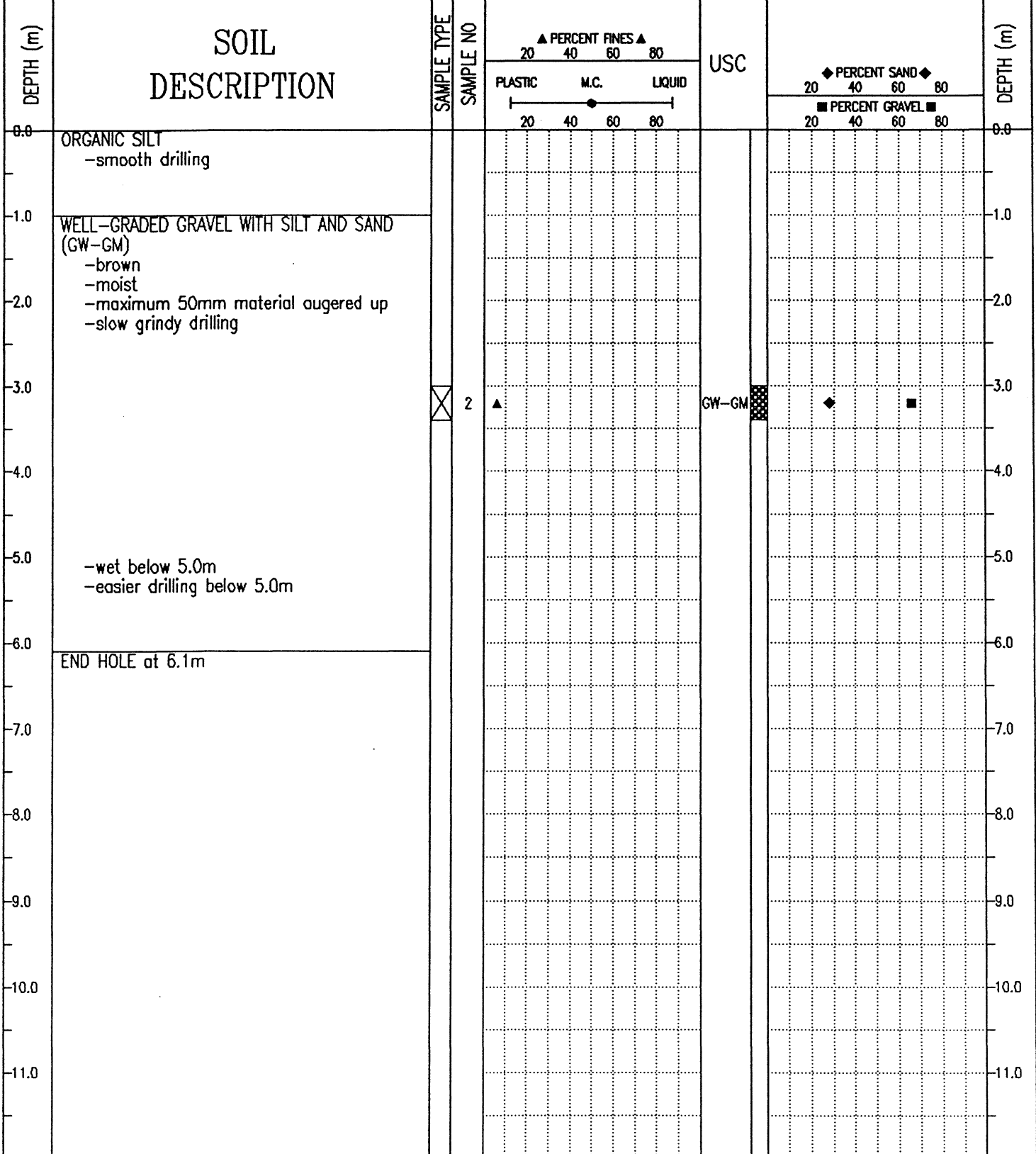
SHAKWAK  
 SEGMENT 18A  
 ALASKA HIGHWAY, YUKON  
 km 1937.2 TO km 1949.6  
 HIGHWAY CONSTRUCTION

<b>Yukon</b>		Department of Community and Transportation Services	
DRAWN	WAE	SCALE	N.T.S.
DATE		DATE	06/92
APPROVED	J.B. COXFORD		92-06
DATE			
TITLE	PIT LAYOUT		NO.
	km 1941		OF
			710-23

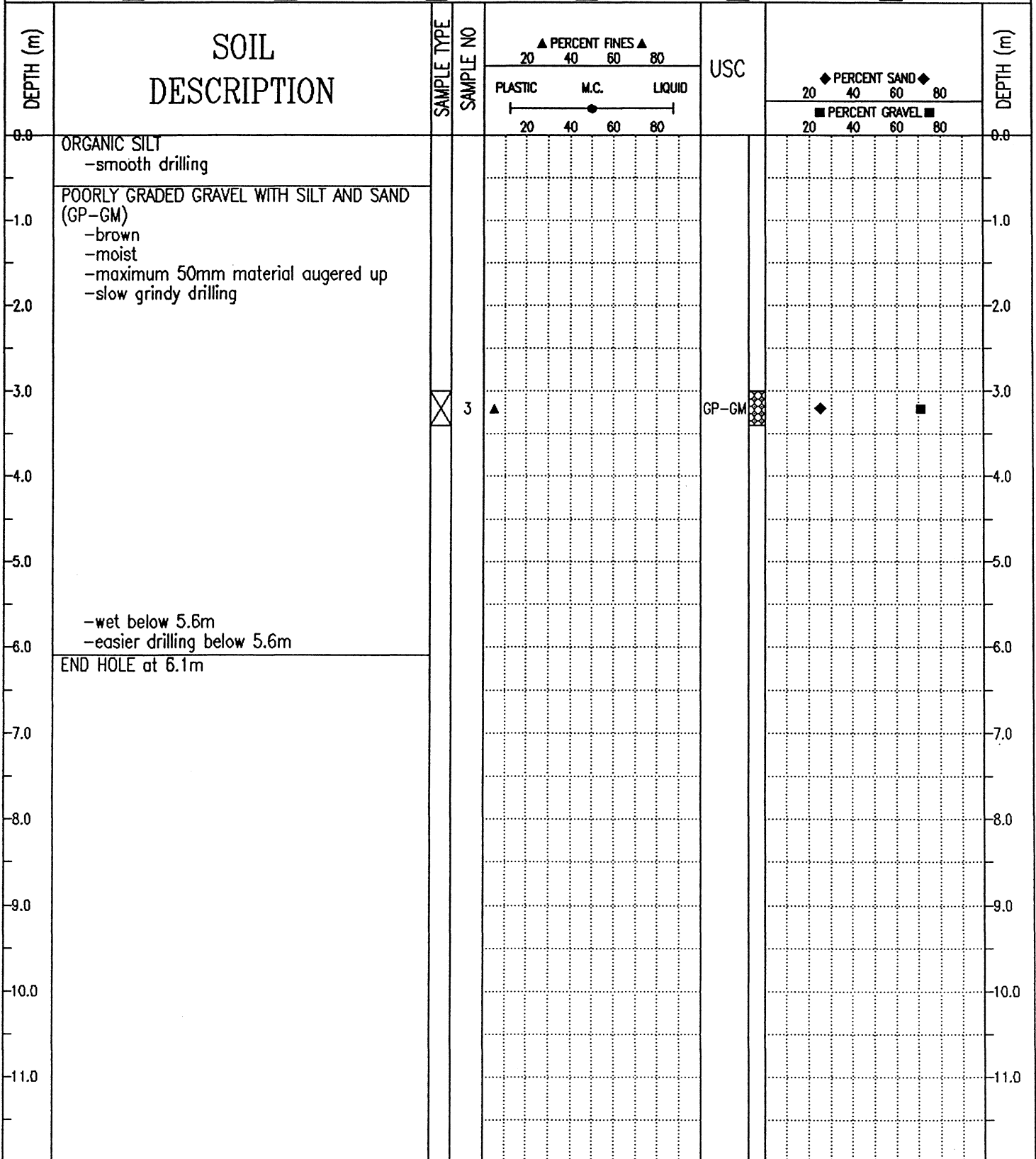
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-40
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-41
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



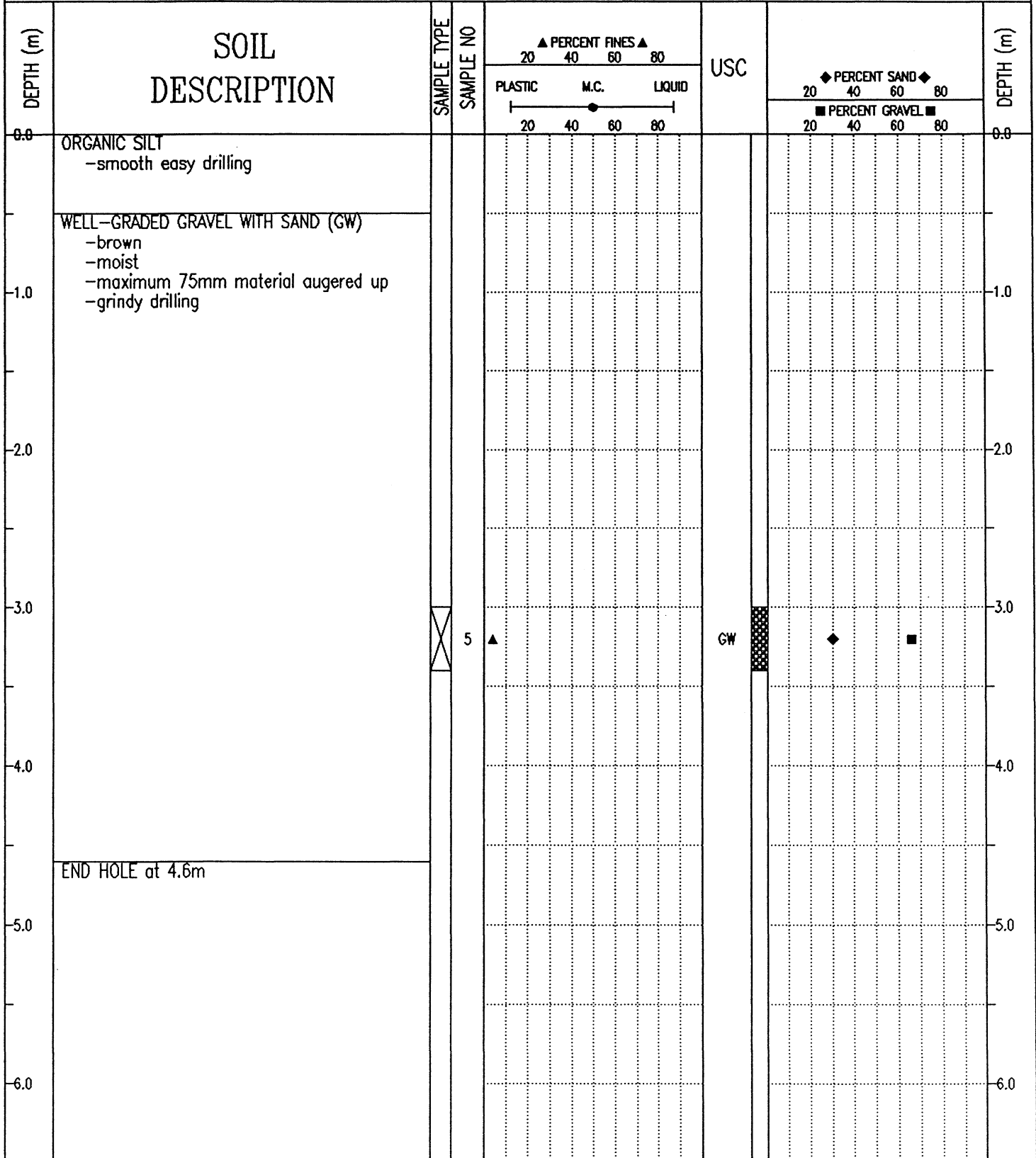
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-42
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-43
SHAKWAK PROJECT		115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER		LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE	<input checked="" type="checkbox"/> RETURN	<input checked="" type="checkbox"/> S.P.T.	<input checked="" type="checkbox"/> AUGER
			<input type="checkbox"/> BULK
			<input type="checkbox"/> TUBE
			<input type="checkbox"/> CORE

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES			USC	PERCENT SAND		PERCENT GRAVEL		DEPTH (m)
				PLASTIC	M.C.	LIQUID		20	40	60	80	
0.0	ORGANIC SILT -smooth drilling											0.0
1.0	POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM) -brown -moist -maximum 75mm material augered up -grindy drilling											1.0
2.0												2.0
3.0												3.0
4.0												4.0
5.0												5.0
6.0	-wet below 5.5m											6.0
6.1	END HOLE at 6.1m											6.1
7.0												7.0
8.0												8.0
9.0												9.0
10.0												10.0
11.0												11.0

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-44
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-45
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERCENT SAND ◆		PERCENT GRAVEL ■	DEPTH (m)
				20	40	60		80	20		
0.0	ORGANIC SILT -smooth drilling										0.0
1.0	WELL-GRADED GRAVEL WITH SAND (GW) -brown -moist -maximum 50mm material augered up -slow grindy drilling										1.0
2.0											2.0
3.0											3.0
4.0											4.0
5.0											5.0
6.0											6.0

Public Works Canada  
Whitehorse, Yukon Territory.

COMPLETION DEPTH 4.6 m

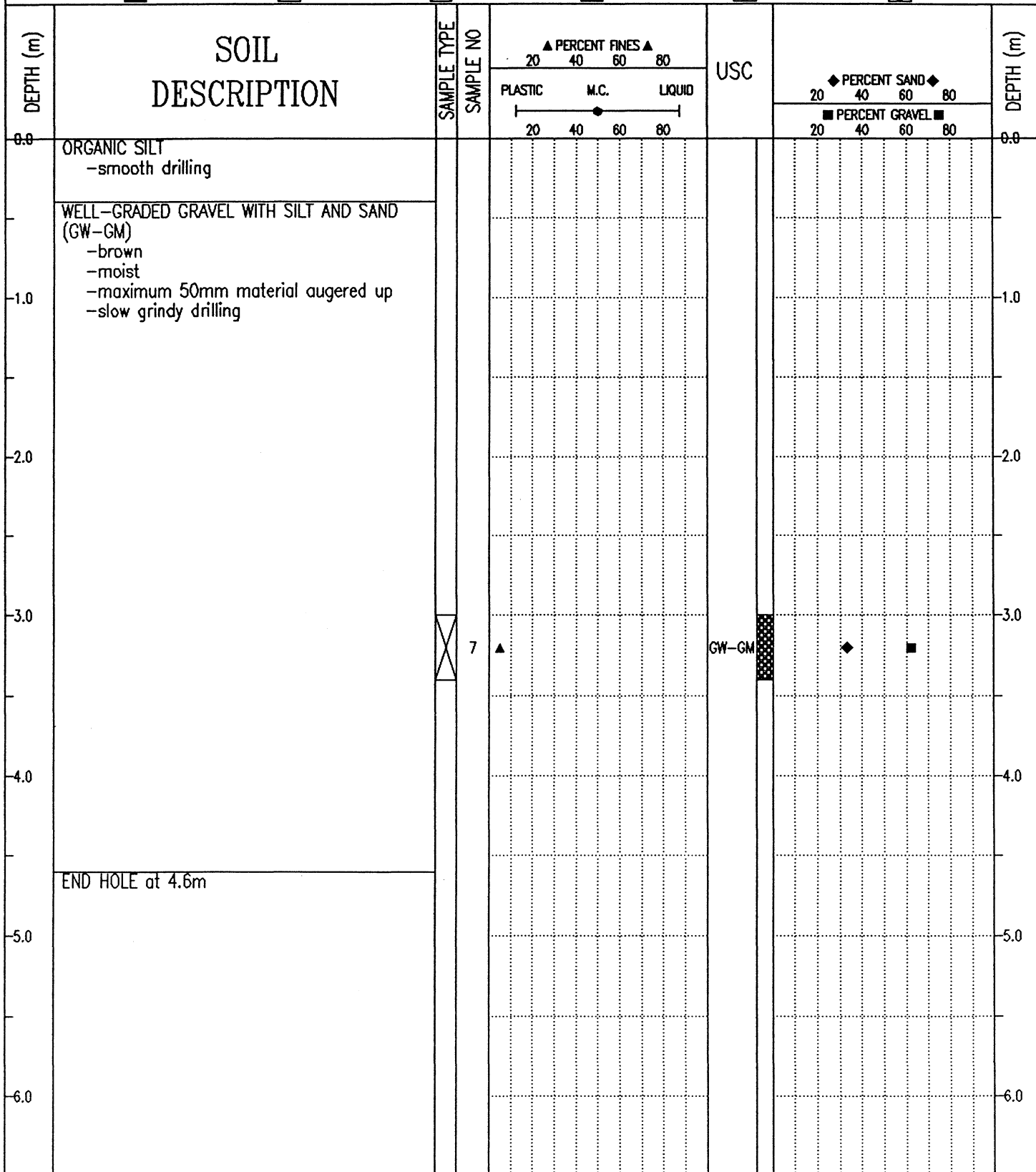
COMPLETE 92/03/04

LOGGED BY DJ

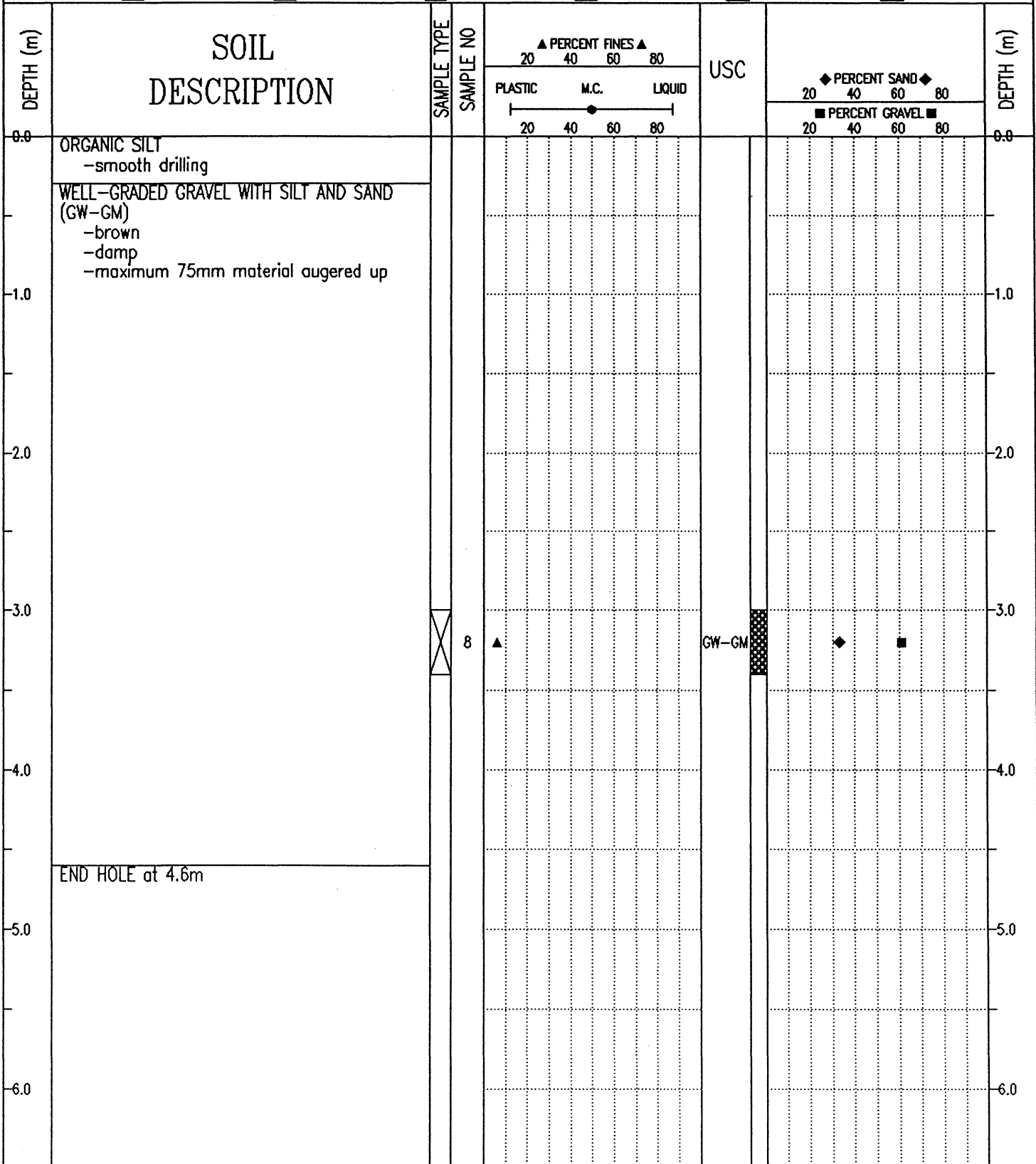
DWG NO.

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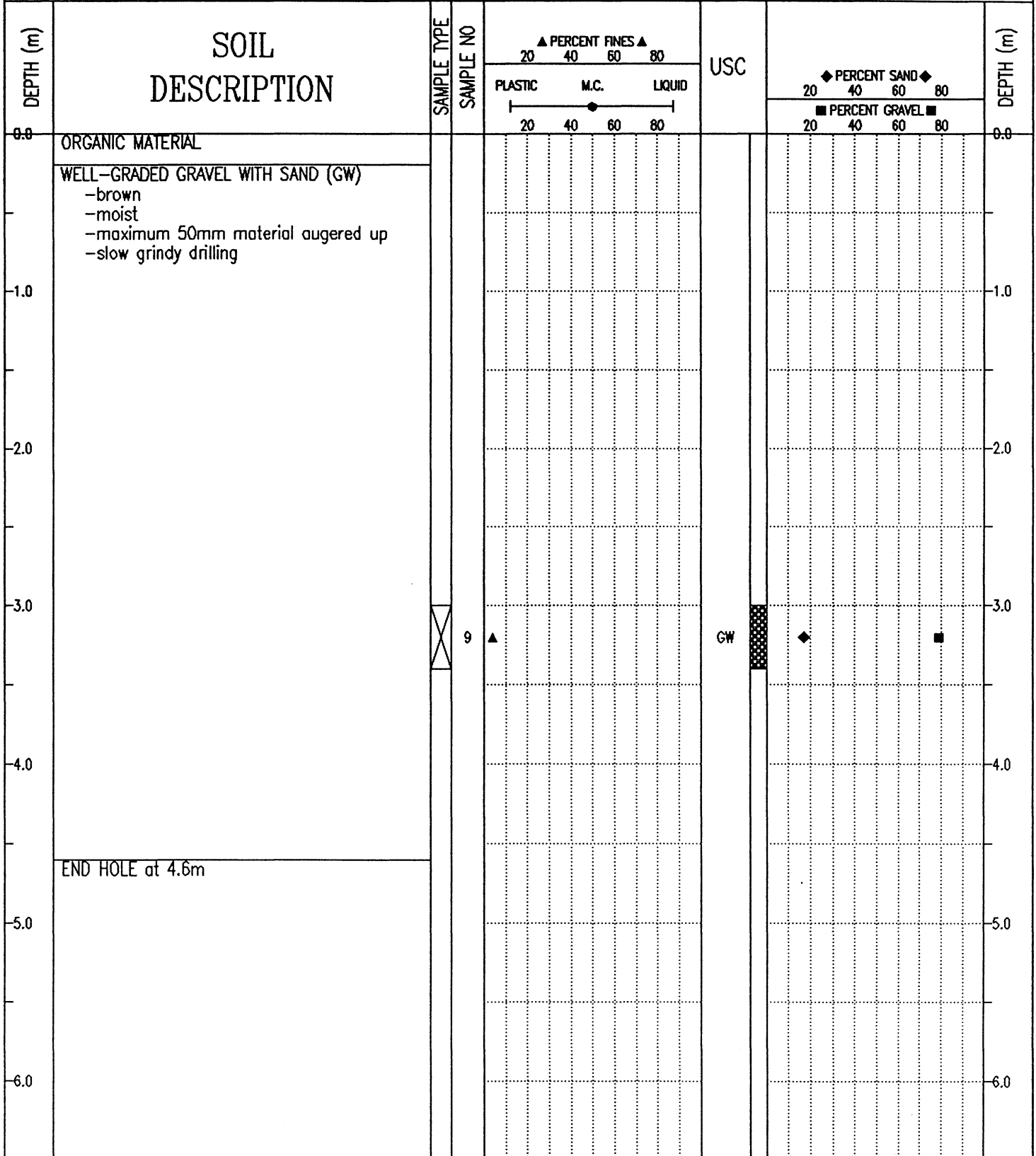
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-46
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



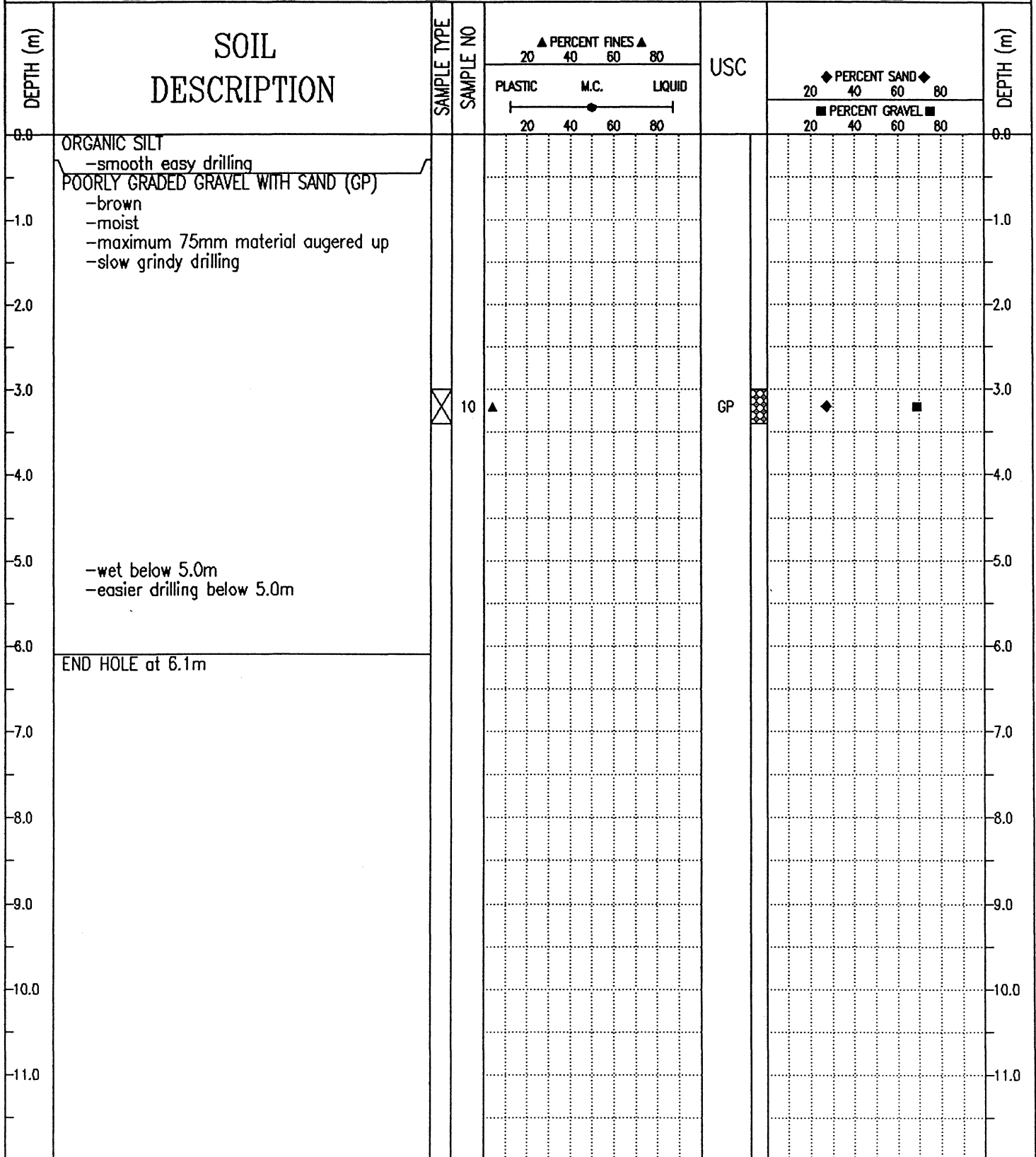
SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-47
SHAKWAK PROJECT		115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER		LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T.		<input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK	<input type="checkbox"/> TUBE <input type="checkbox"/> CORE



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-48
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-49
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



Public Works Canada  
Whitehorse, Yukon Territory.

COMPLETION DEPTH 6.1 m

COMPLETE 92/03/04

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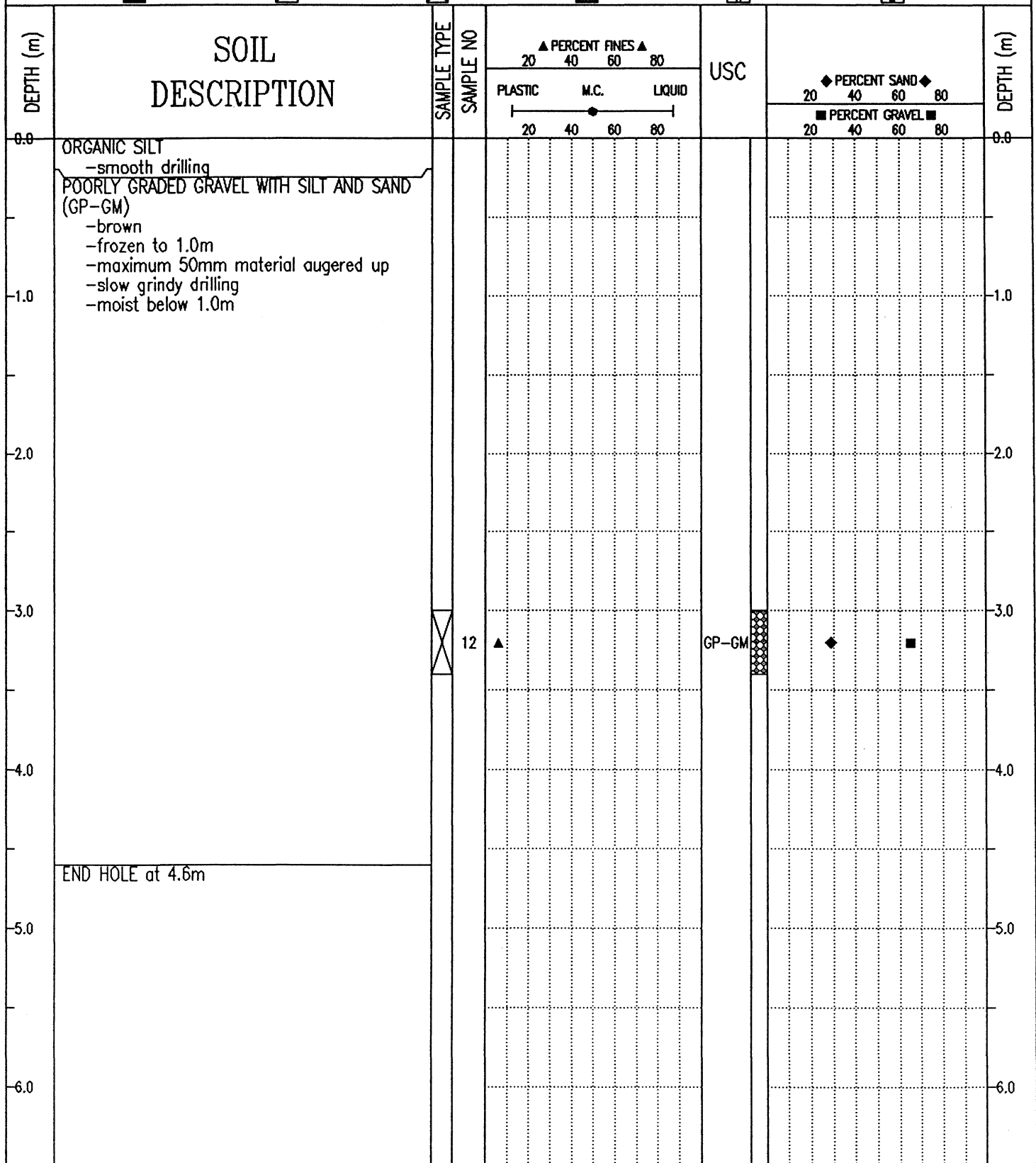
DWG NO.

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SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-50
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	PERCENT FINES ▲			USC	PERCENT SAND ◆		PERCENT GRAVEL ■	DEPTH (m)
				20	40	60		80	20		
0.0	ORGANIC SILT -smooth easy drilling										0.0
0.0 - 1.0	WELL-GRADED GRAVEL WITH SAND (GW) -brown -moist -maximum 75mm material augered up -slow grindy drilling										
3.0		<input checked="" type="checkbox"/>	11	▲			GW	◆	■		3.0
4.6	END HOLE at 4.6m										4.6

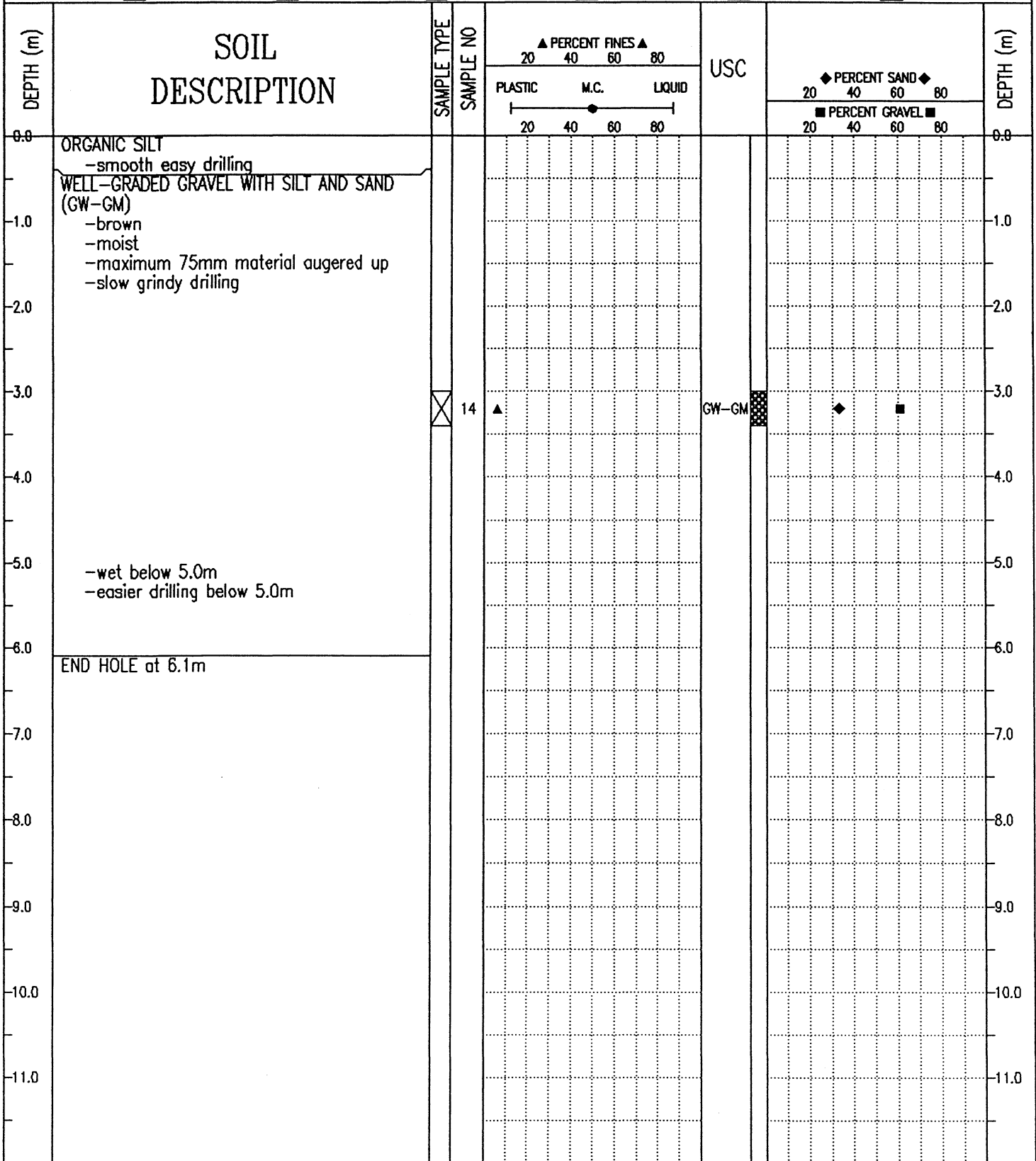
SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-51
SHAKWAK PROJECT		115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER		LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE			



SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-52
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

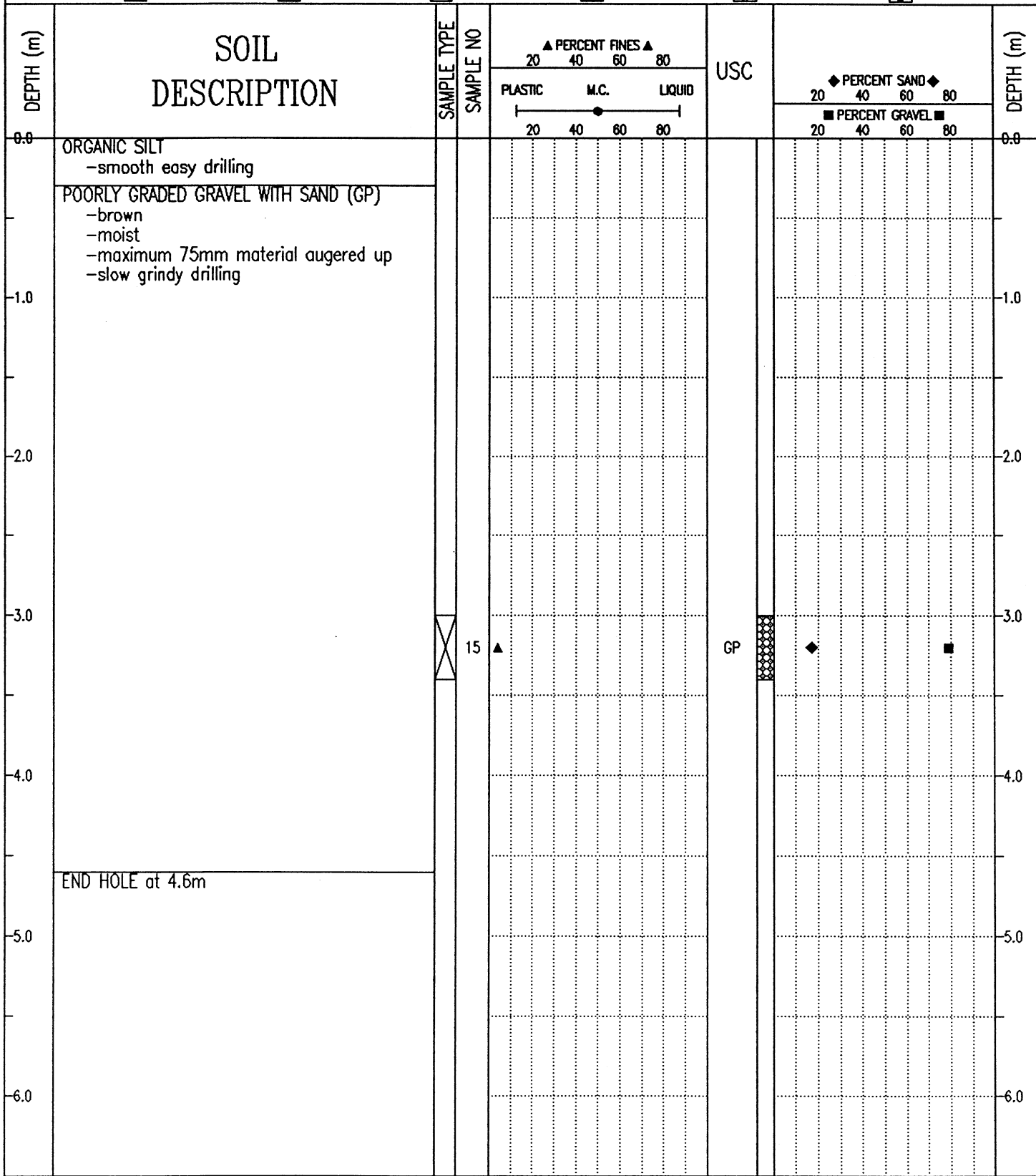
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲			USC	◆ PERCENT SAND ◆		■ PERCENT GRAVEL ■	DEPTH (m)
				PLASTIC	M.C.	LIQUID		20	40		
0.0	ORGANIC SILT -smooth drilling										0.0
0.0 - 4.6	WELL-GRADED GRAVEL (GW) -brown -moist -maximum 50mm material augered -slow grindy drilling										
3.0			13				GW				3.0
4.6	END HOLE at 4.6m										4.6

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-53
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		



Public Works Canada Whitehorse, Yukon Territory.	COMPLETION DEPTH 6.1 m	COMPLETE 92/03/05
	LOGGED BY DJ	DWG NO.

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-54
SHAKWAK PROJECT		115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER		LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T.		<input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK	<input type="checkbox"/> TUBE <input type="checkbox"/> CORE



Public Works Canada  
Whitehorse, Yukon Territory.

COMPLETION DEPTH 4.6 m

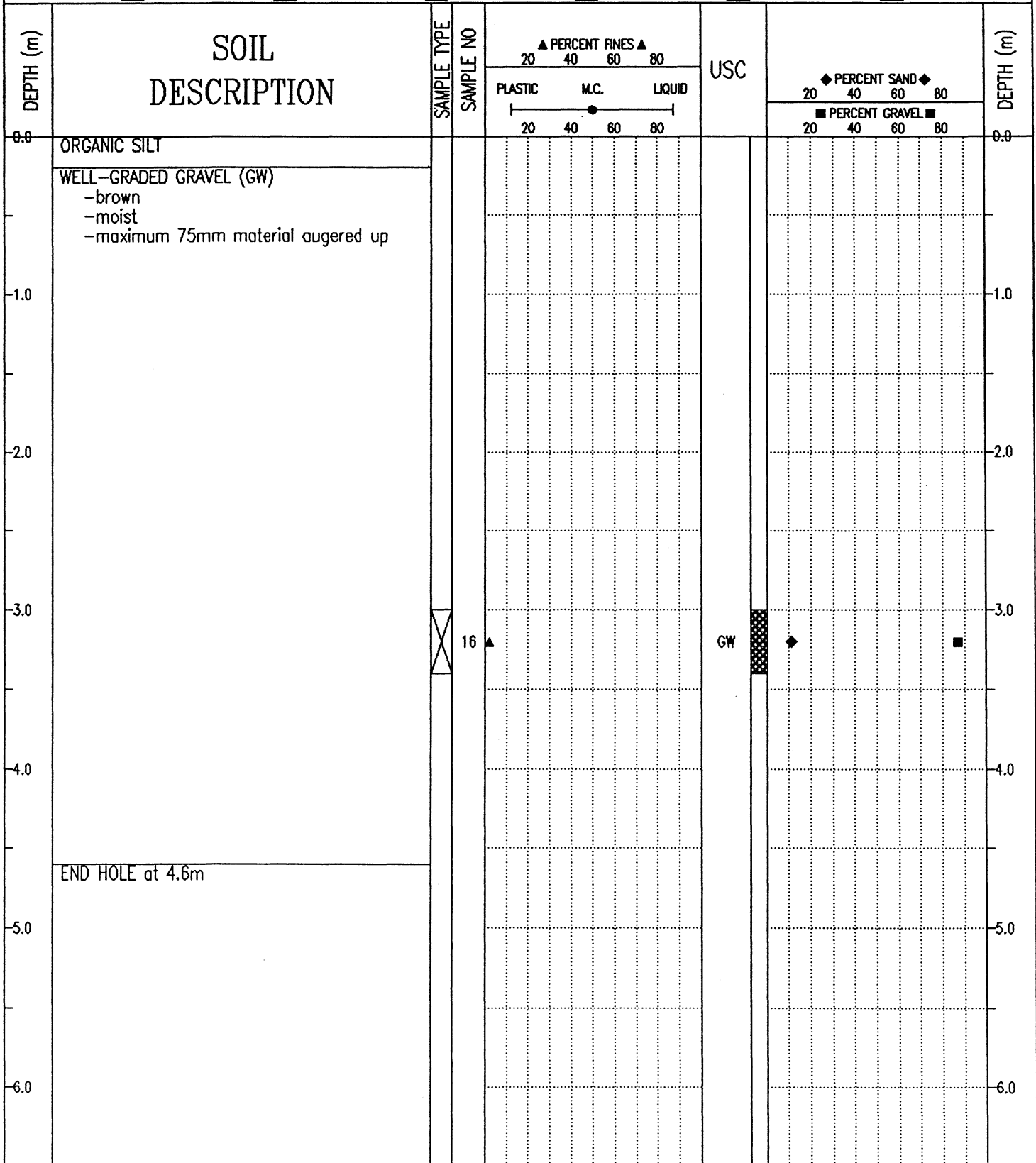
COMPLETE 92/03/05

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DWG NO.

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SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-55
SHAKWAK PROJECT		115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER		LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T.		<input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK	<input type="checkbox"/> TUBE <input type="checkbox"/> CORE

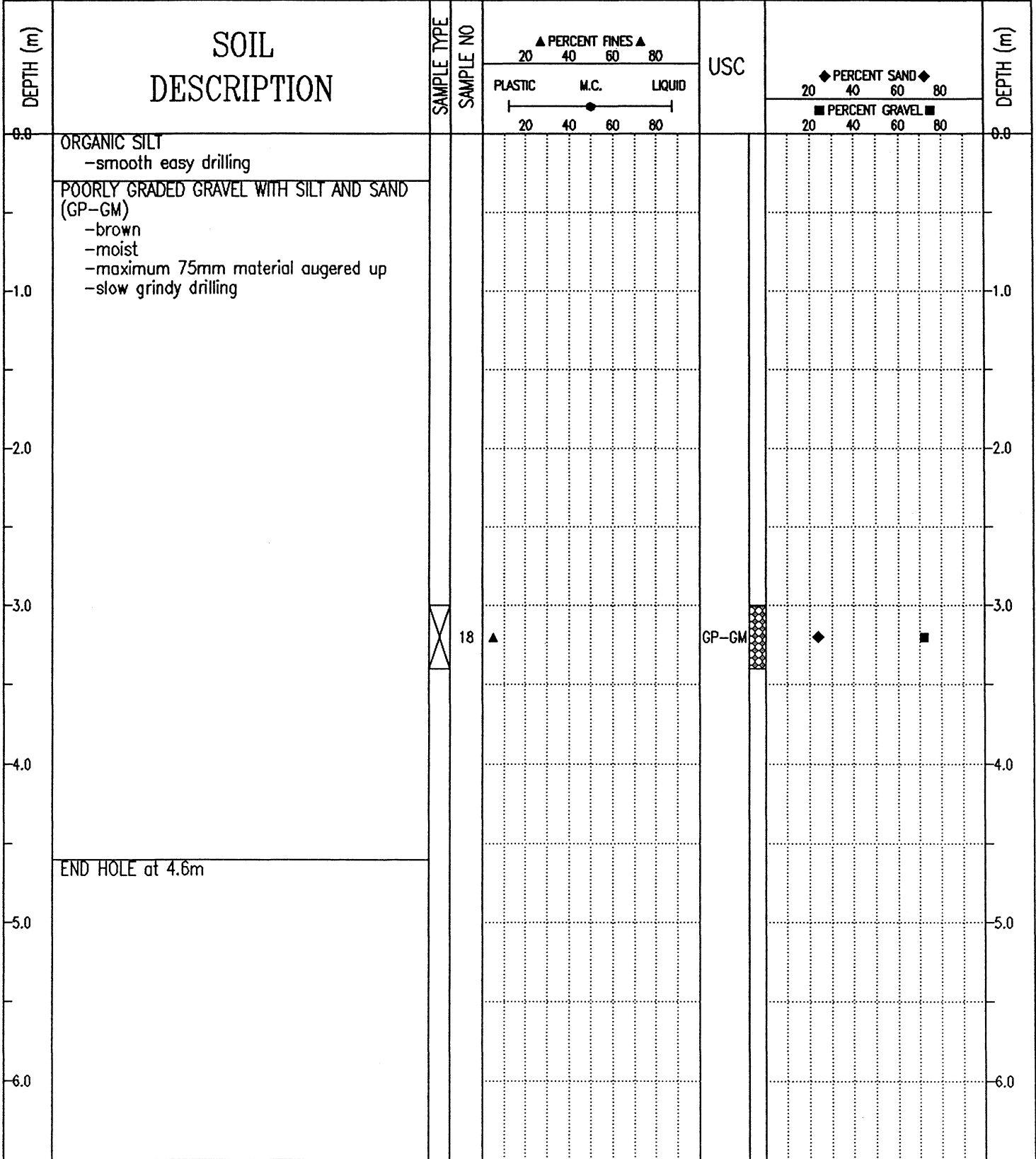


SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-56
SHAKWAK PROJECT		115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER		LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T.		<input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK	<input type="checkbox"/> TUBE <input type="checkbox"/> CORE

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲			USC	◆ PERCENT SAND ◆		■ PERCENT GRAVEL ■	DEPTH (m)
				PLASTIC	M.C.	LIQUID		20	40		
0.0	ORGANIC SILT -SMOOTH EASY DRILLING										0.0
1.0	POORLY GRADED GRAVEL (GP) -brown -moist -maximum 75mm material augered -slow grindy drilling										1.0
3.0	-fines not augering up very well	<input checked="" type="checkbox"/>	17	▲			GP	◆	■		3.0
4.6	END HOLE at 4.6m										4.6

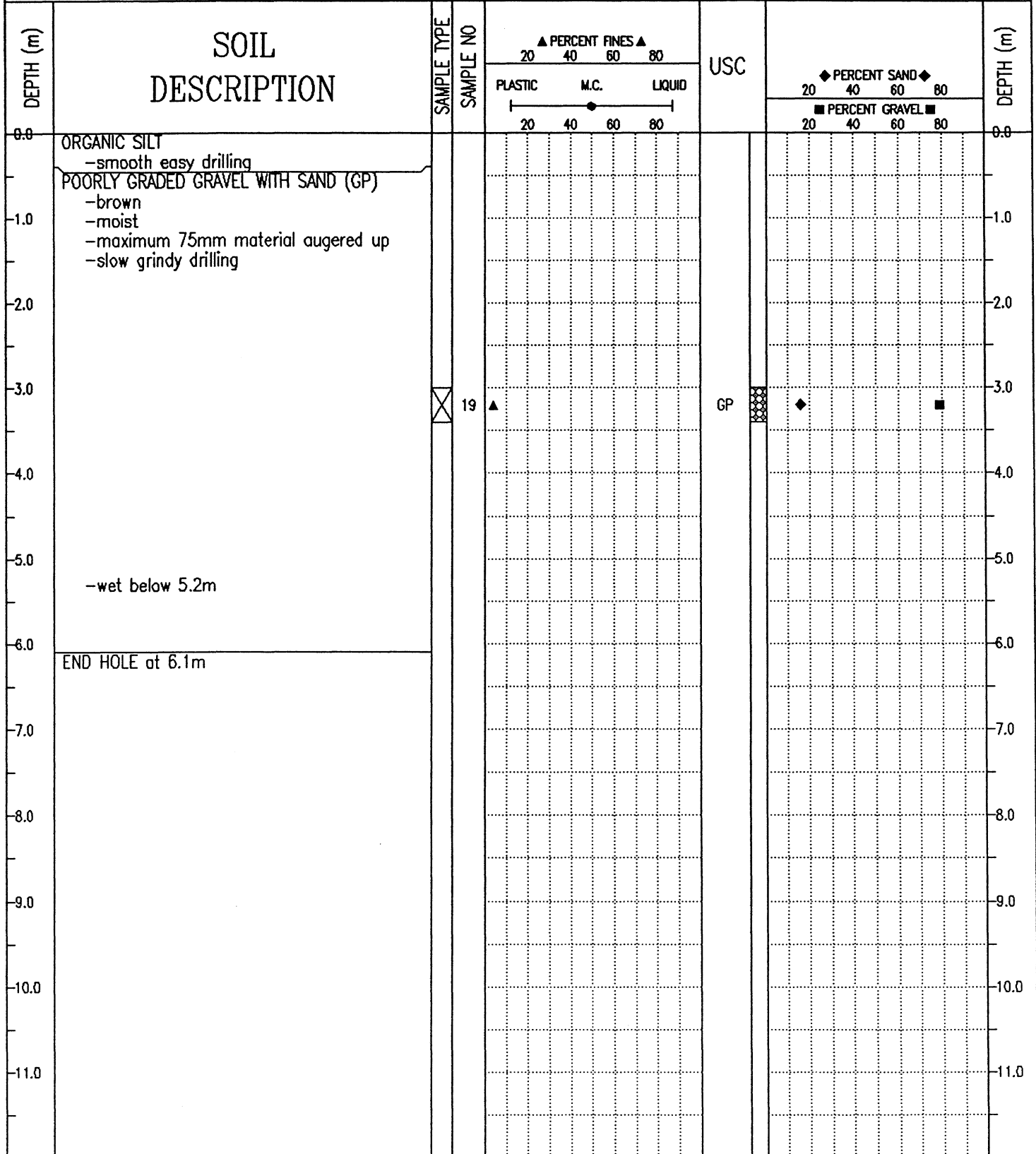
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-57
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



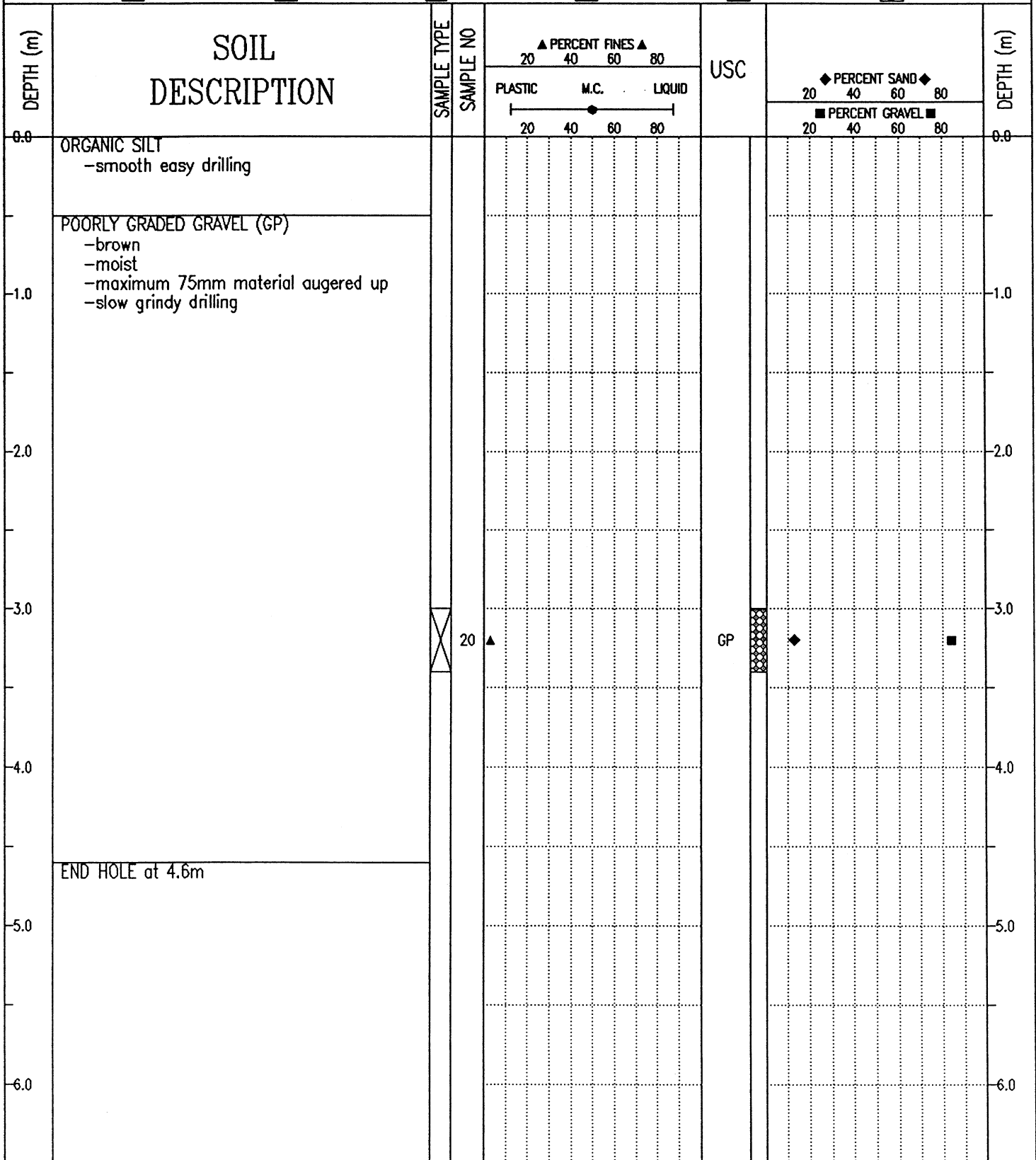
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 170-58
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm Dia. SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



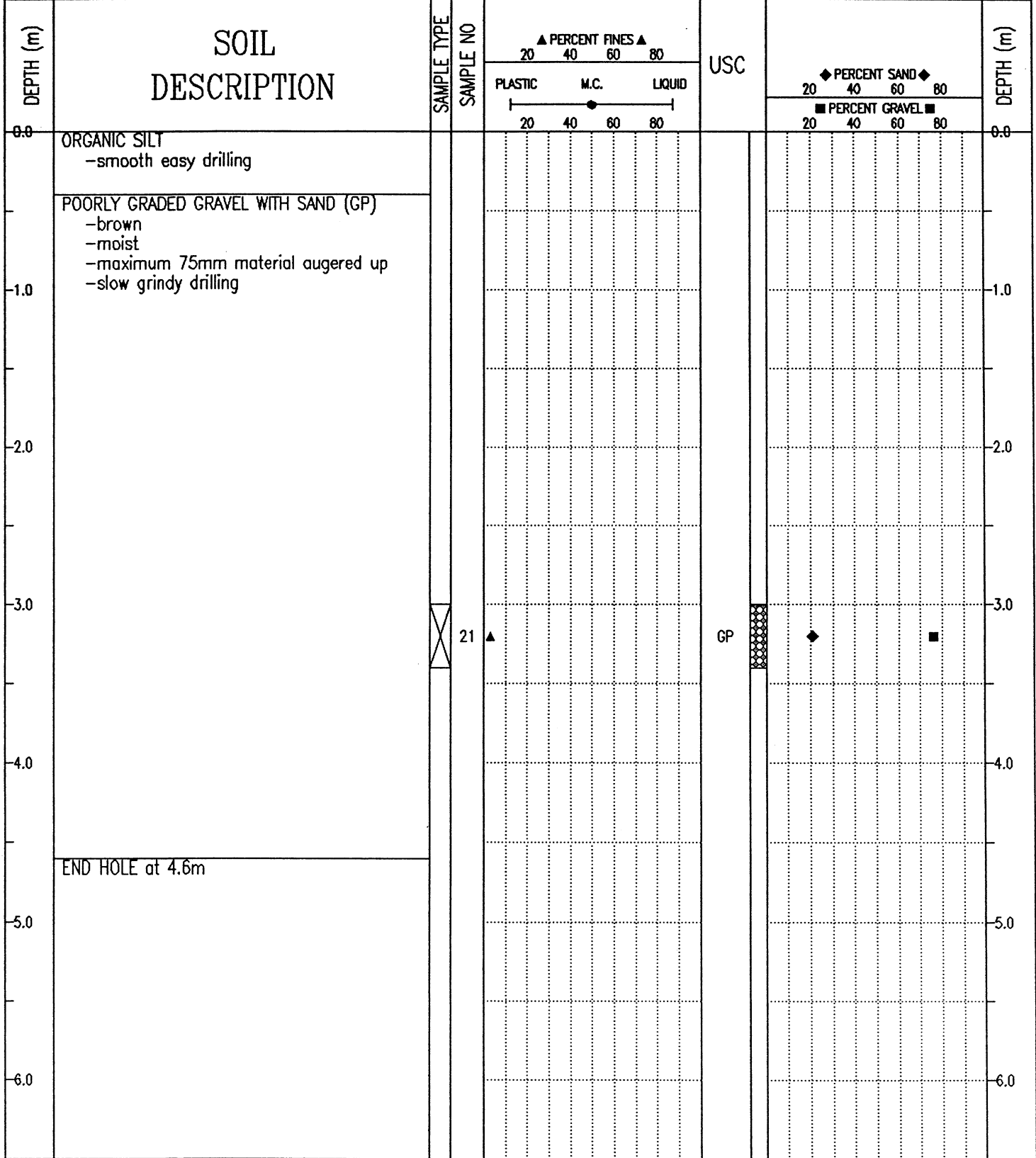
Public Works Canada Whitehorse, Yukon Territory.	COMPLETION DEPTH 6.1 m	COMPLETE 92/03/05
	LOGGED BY DJ	DWG NO.

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 164-59
SHAKWAK PROJECT		115K-01	Project No: 745920
DRILL: B40L 150mm SOLID STEM AUGER		LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T.		<input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK	<input type="checkbox"/> TUBE <input type="checkbox"/> CORE

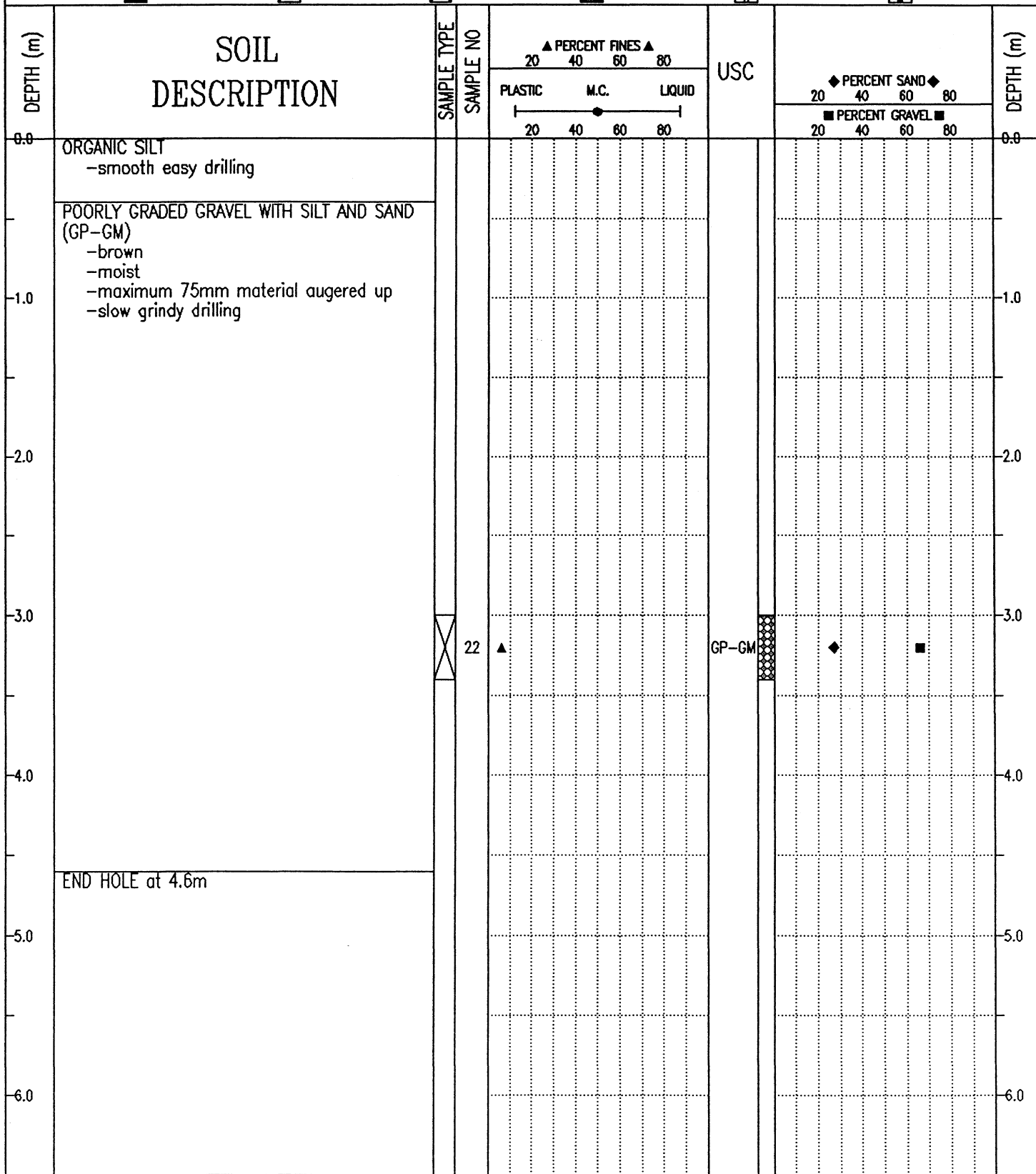


SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 164-60
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE

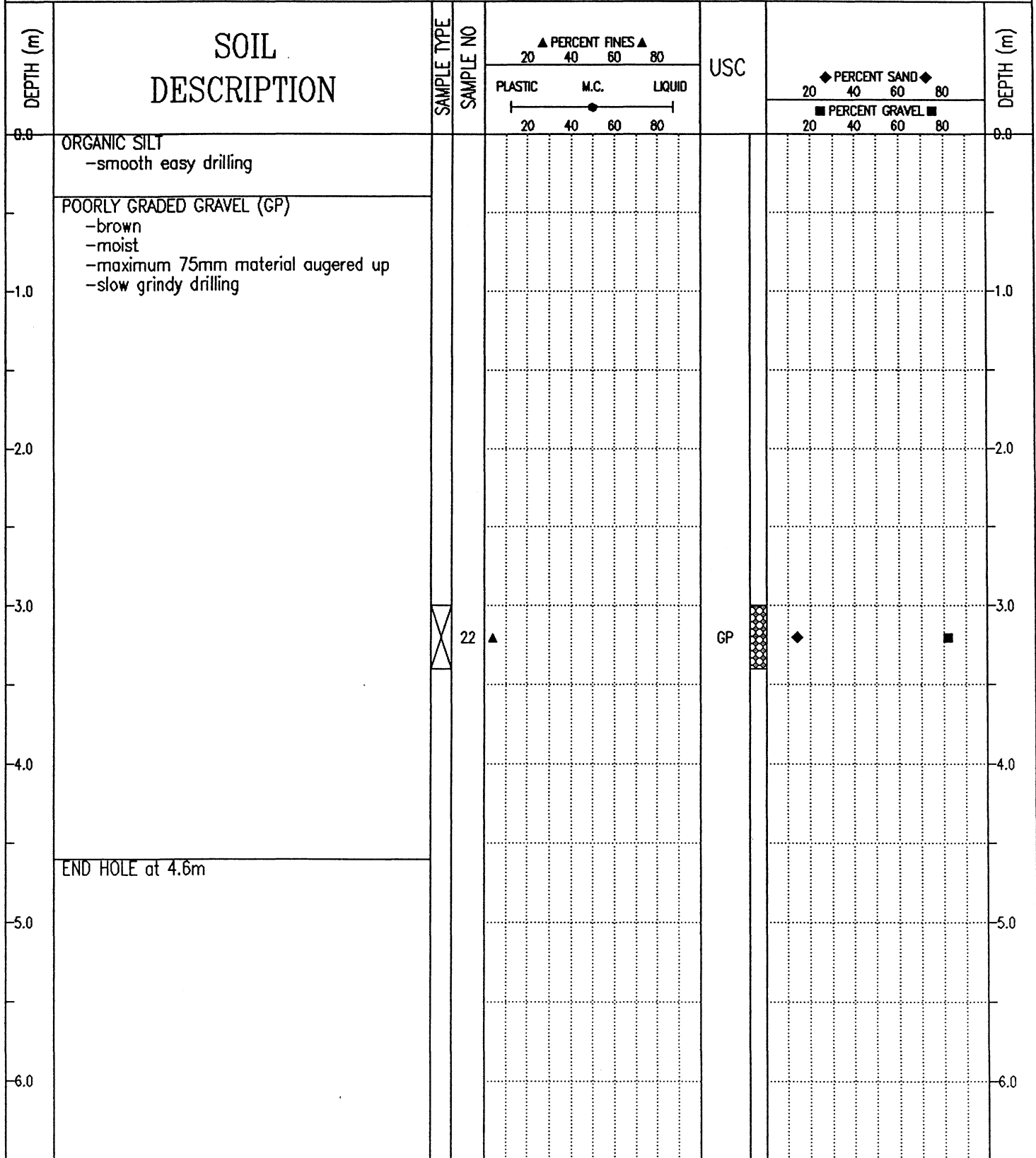


SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 164-61
SHAKWAK PROJECT		115K-01	Project No: 745920
DRILL: B40L 150mm SOLID STEM AUGER		LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE			



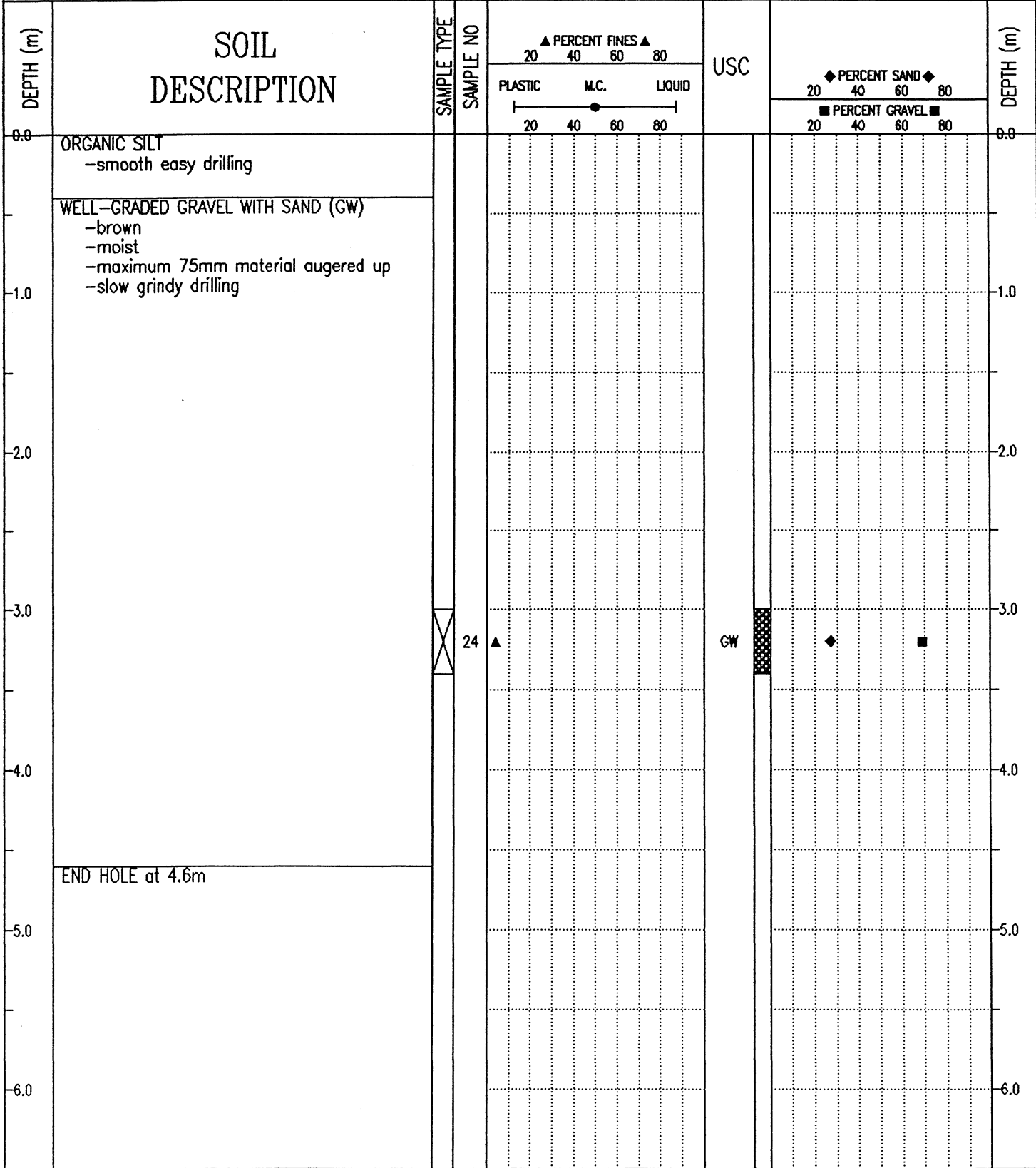
SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 164-62
SHAKWAK PROJECT		115K-01	Project No: 745920
DRILL: B40L 150mm SOLID STEM AUGER		LOCATION: See Plan	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE

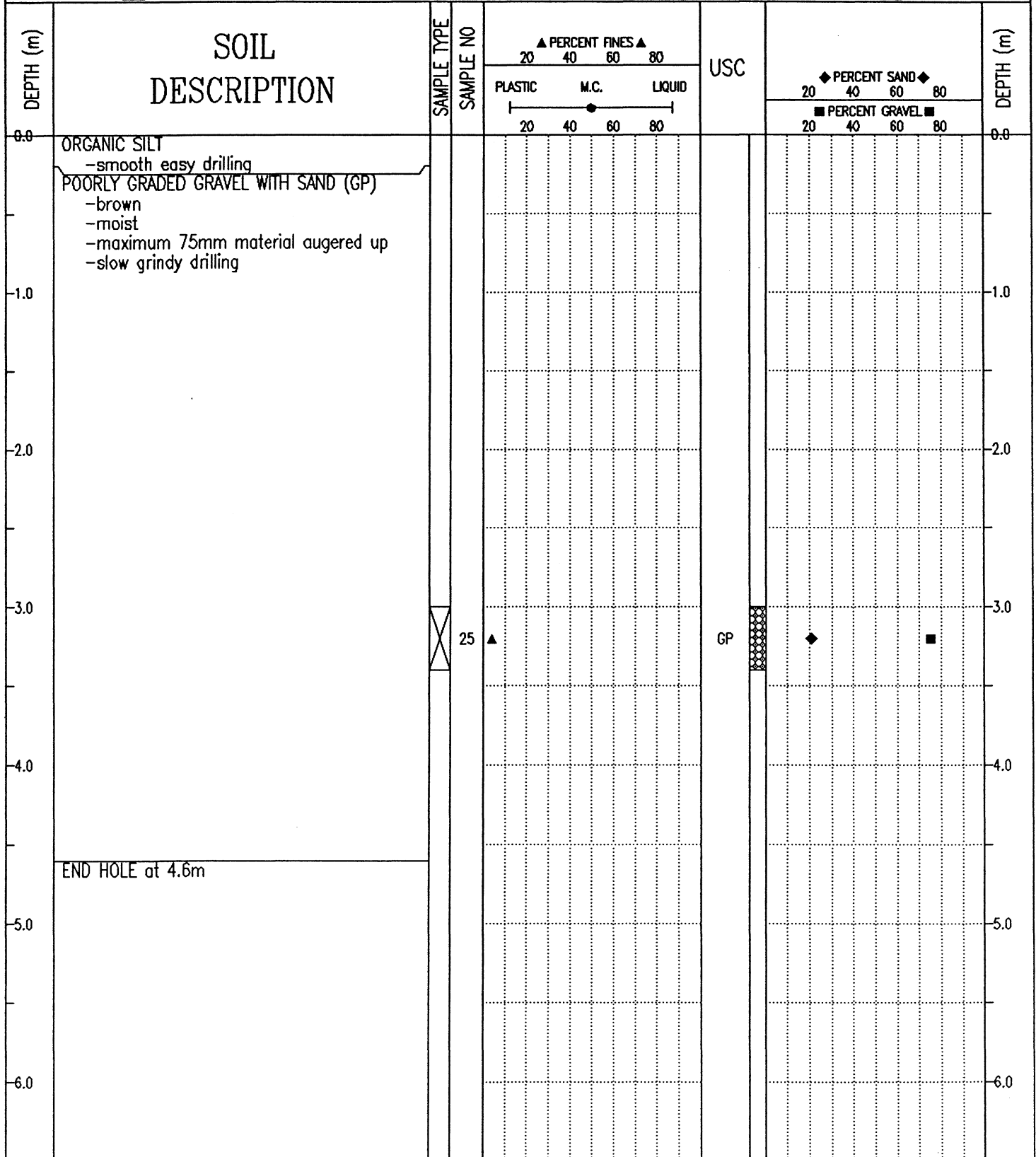


SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 164-63
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 164-64
SHAKWAK PROJECT		115K-01	Project No: 745920
DRILL: B40L 150mm SOLID STEM AUGER		LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE	<input type="checkbox"/> RETURN	<input checked="" type="checkbox"/> S.P.T.	<input checked="" type="checkbox"/> AUGER
			<input type="checkbox"/> BULK
			<input type="checkbox"/> TUBE
			<input type="checkbox"/> CORE



Public Works Canada  
Whitehorse, Yukon Territory.

COMPLETION DEPTH 4.6 m

COMPLETE 92/03/05

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DWG NO.

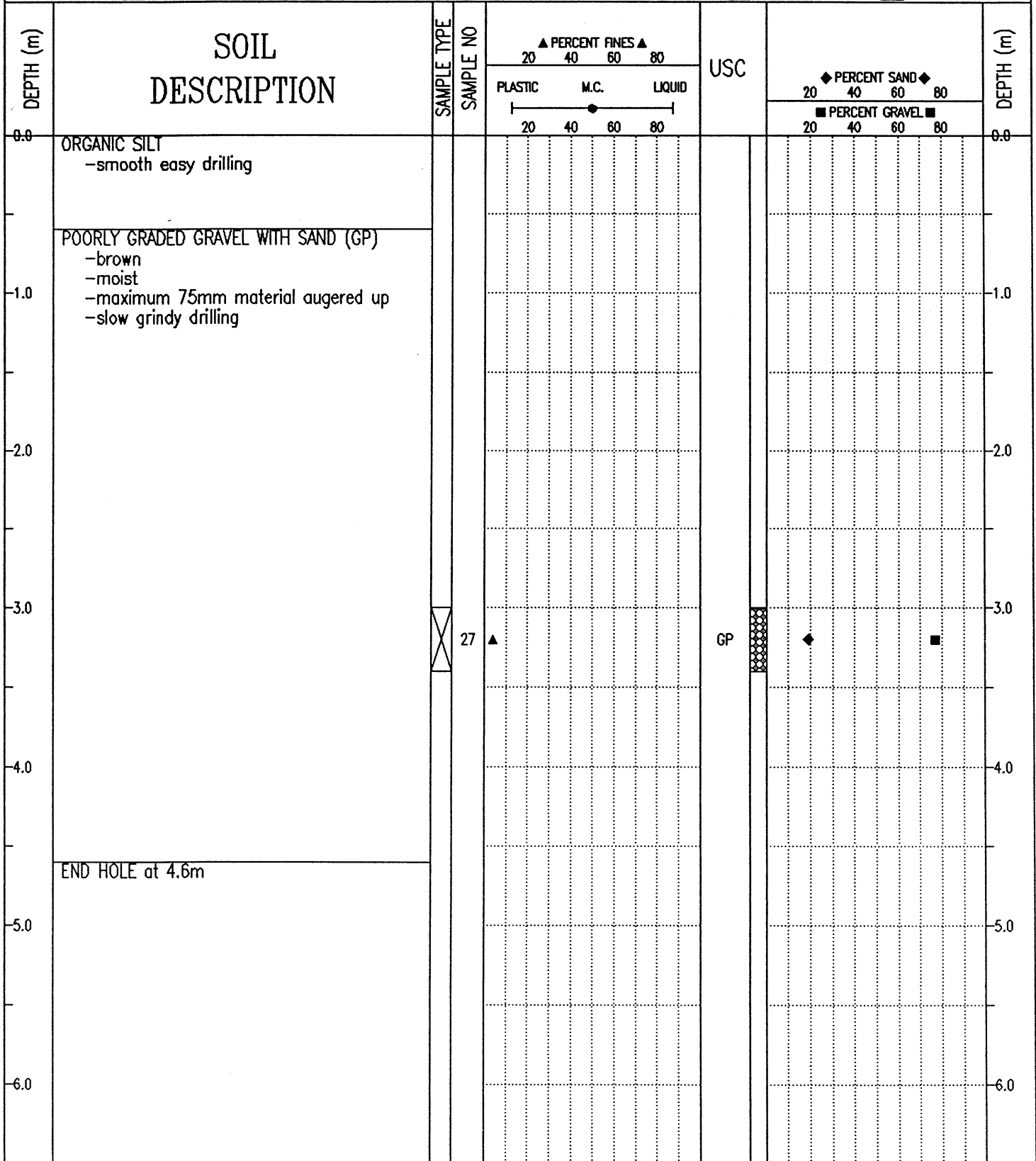
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SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 164-65
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE		

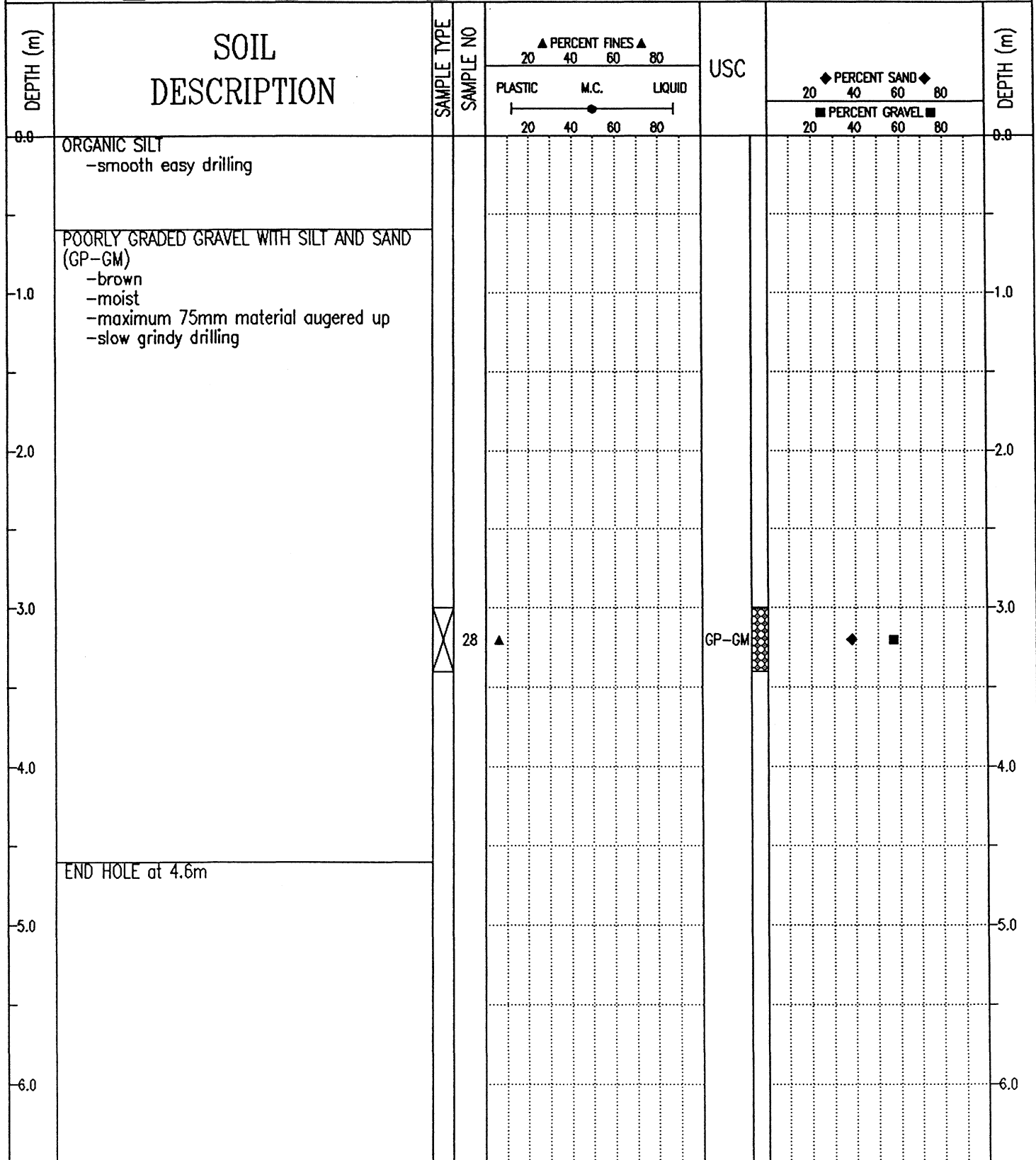
DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲			USC	◆ PERCENT SAND ◆			■ PERCENT GRAVEL ■	DEPTH (m)
				20	40	60		80	20	40		
0.0	ORGANIC SILT -smooth easy drilling											0.0
0.0 - 1.0	POORLY GRADED GRAVEL WITH SAND (GP) -brown -moist -maximum 75mm material augered up -slow grindy drilling											0.0 - 1.0
1.0 - 2.0												1.0 - 2.0
2.0 - 3.0												2.0 - 3.0
3.0 - 4.0												3.0 - 4.0
4.0 - 5.0												4.0 - 5.0
5.0 - 6.0												5.0 - 6.0
	END HOLE at 4.6m											

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 164-66
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 164-67
SHAKWAK PROJECT		115K-01	Project No: 745920
DRILL: B40L 150mm SOLID STEM AUGER		LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T.		<input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK	<input type="checkbox"/> TUBE <input type="checkbox"/> CORE



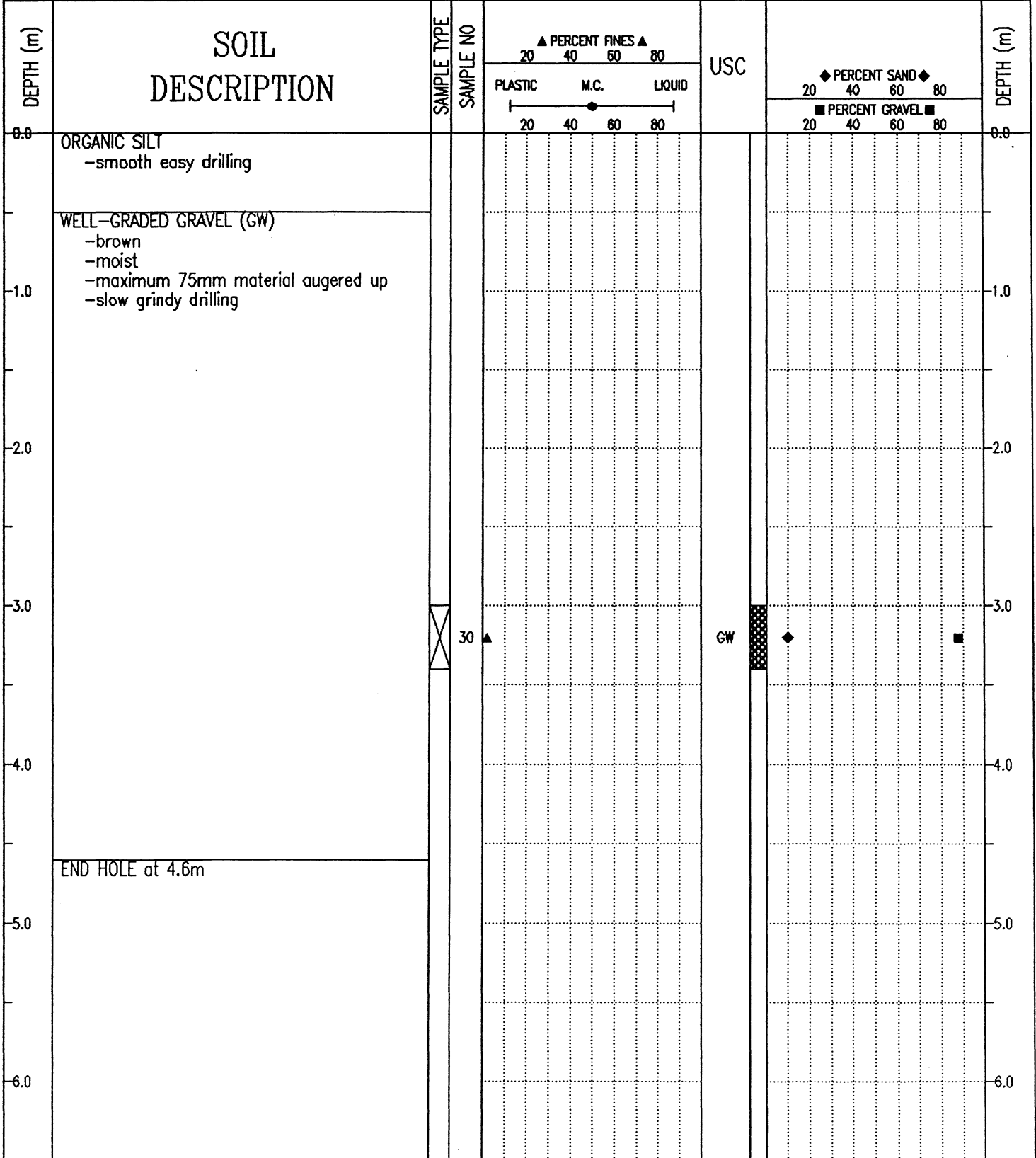
SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 164-68
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE

DEPTH (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	▲ PERCENT FINES ▲			USC	◆ PERCENT SAND ◆		■ PERCENT GRAVEL ■	DEPTH (m)
				PLASTIC	M.C.	LIQUID		20	40		
0.0	ORGANIC SILT -smooth easy drilling										0.0
1.0	GRAVELLY SILT -brown -damp -slightly grindy drilling										1.0
2.0	POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM) -brown -moist -maximum 75mm material augered up -slow grindy drilling										2.0
3.0			29	▲			GP-GM	◆	■		3.0
4.0											4.0
5.0	END HOLE at 4.6m										5.0
6.0											6.0

SUBSURFACE EXPLORATION AND TEST REPORT	ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 164-69
SHAKWAK PROJECT	115K-01	Project No: 745920
DRILL: B40L 150mm SOLID STEM AUGER	LOCATION: See Plan	ELEVATION 0.000 (m)

SAMPLE TYPE  RETURN  S.P.T.  AUGER  BULK  TUBE  CORE



Public Works Canada  
Whitehorse, Yukon Territory.

COMPLETION DEPTH 4.6 m

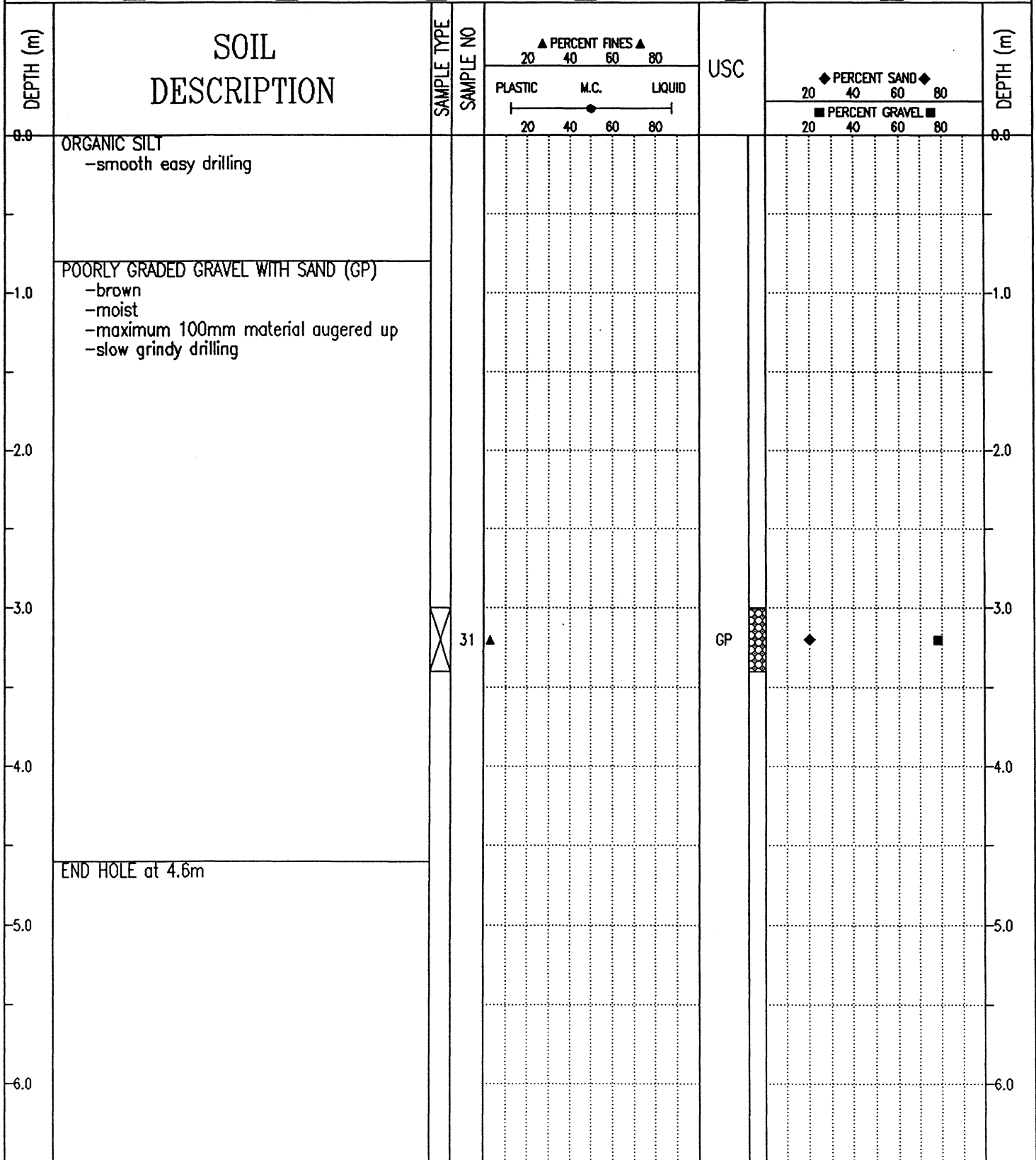
COMPLETE 92/03/05

LOGGED BY DJ

DWG NO.

Page 1 of 1

SUBSURFACE EXPLORATION AND TEST REPORT		ALASKA HIGHWAY GRANULAR INVESTIGATION	BOREHOLE No. 164-70
SHAKWAK PROJECT		115K-01	Project No: 745920
DRILL: B40L 150mm SOLID STEM AUGER		LOCATION: See Plan	ELEVATION 0.000 (m)
SAMPLE TYPE <input type="checkbox"/> RETURN <input checked="" type="checkbox"/> S.P.T. <input checked="" type="checkbox"/> AUGER <input type="checkbox"/> BULK <input type="checkbox"/> TUBE <input type="checkbox"/> CORE			



PROJECT NUMBER: 745927 HOLE NUMBER: 163-40  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.04

FIELD NO: 1  
 LAB NO: 5639  
 DEPTH: 2.6-3.0  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	--
38.1	100
25.4	73
19.0	55
12.7	39
9.5	33
4.76	22
2.38	--
2.00	16
1.19	--
0.841	12
0.595	--
0.42	9
0.297	--
0.177	--
0.149	5
0.074	4

M.C. (%): --

LIMITS

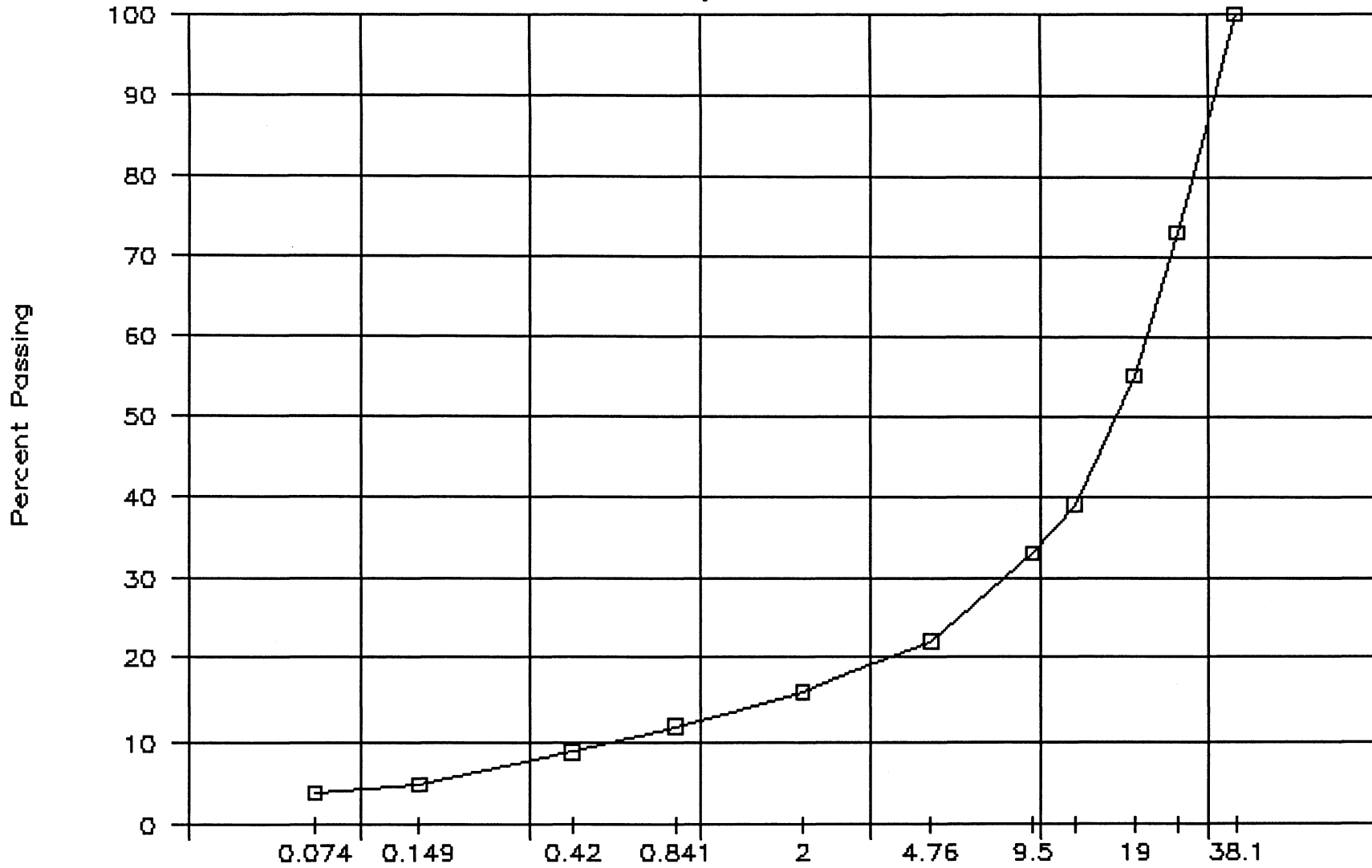
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 78  
 % SAND: 18  
 % FINES: 4

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SAND  
 (GP)

# PUBLIC WORKS CANADA — WHITEHORSE, Y.T.

Grain Size Analysis — Hole 163-40



□ SAMP. 1      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-4/  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.04

FIELD NO: 2  
 LAB NO: 5640  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	--
38.1	100
25.4	90
19.0	77
12.7	58
9.5	49
4.76	34
2.38	--
2.00	26
1.19	--
0.841	20
0.595	--
0.42	13
0.297	--
0.177	--
0.149	7
0.074	6

M.C. (%): --

LIMITS

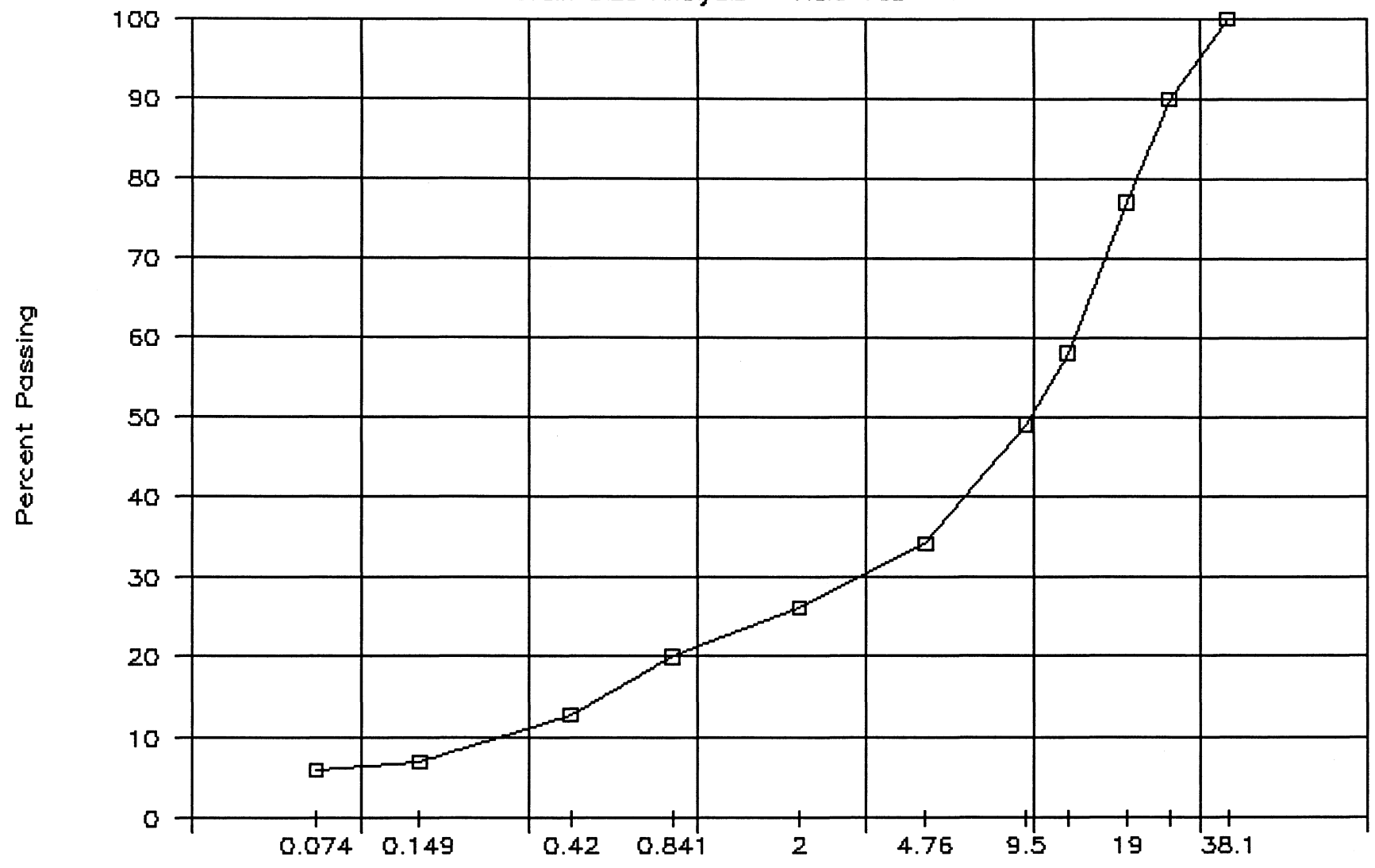
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 66  
 % SAND: 28  
 % FINES: 6

CLASSIFICATION:  
 WELL-GRADED  
 GRAVEL WITH SILT  
 & SAND (GW-GM)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 163-41



□ SAMP. 2      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-42  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.04

FIELD NO: 3  
 LAB NO: 5633  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	--
38.1	100
25.4	91
19.0	76
12.7	53
9.5	43
4.76	29
2.38	--
2.00	22
1.19	--
0.841	17
0.595	--
0.42	11
0.297	--
0.177	--
0.149	6
0.074	5

M.C. (%): --

LIMITS

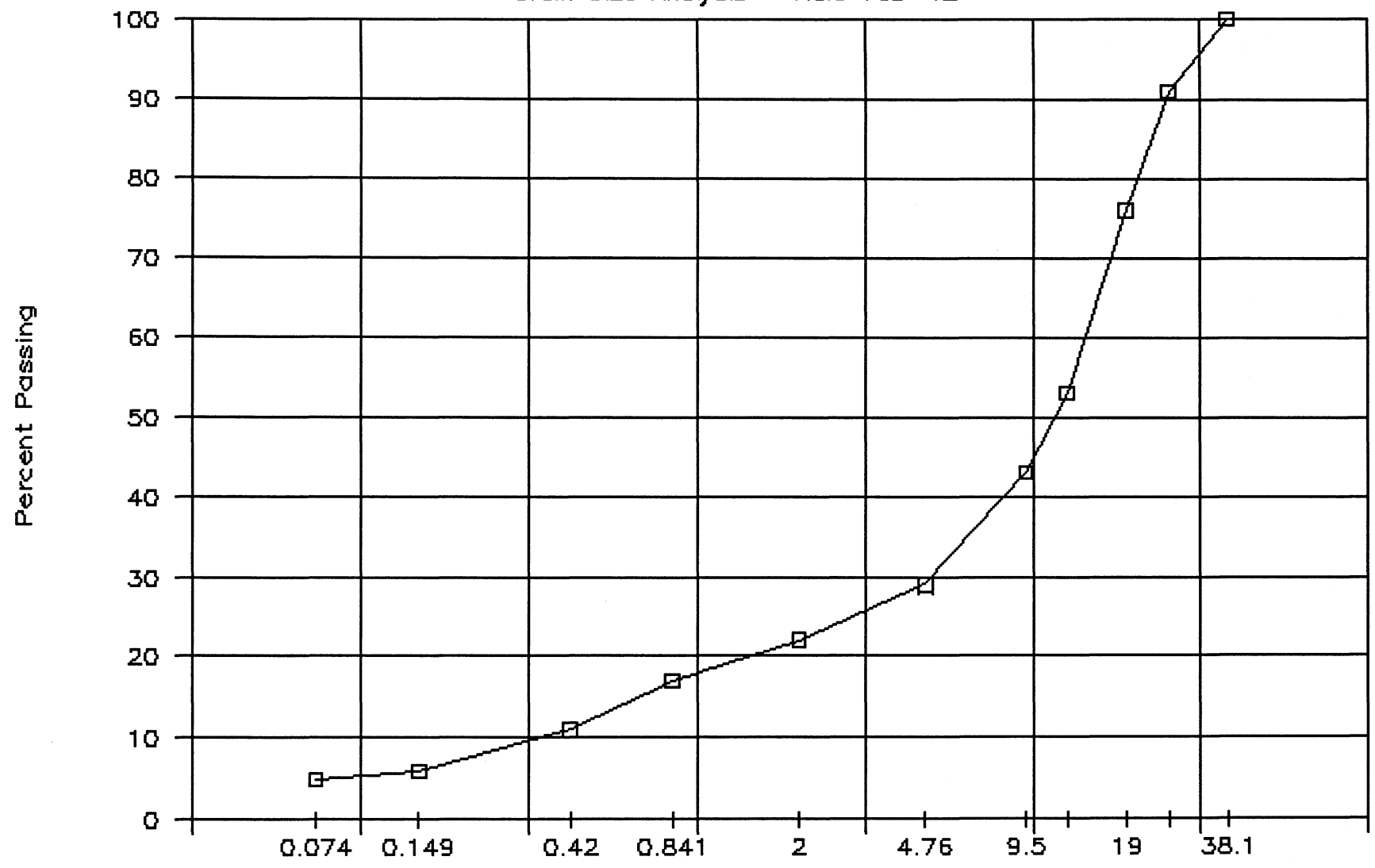
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 71  
 % SAND: 25  
 % FINES: 5

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SILT  
 & SAND (GP-GM)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 163-42



□ SAMP. 3      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-43  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.04

FIELD NO: 4  
 LAB NO: 5641  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	100
38.1	97
25.4	83
19.0	67
12.7	49
9.5	39
4.76	28
2.38	--
2.00	21
1.19	--
0.841	16
0.595	--
0.42	10
0.297	--
0.177	--
0.149	6
0.074	5

M.C. (%): --

LIMITS

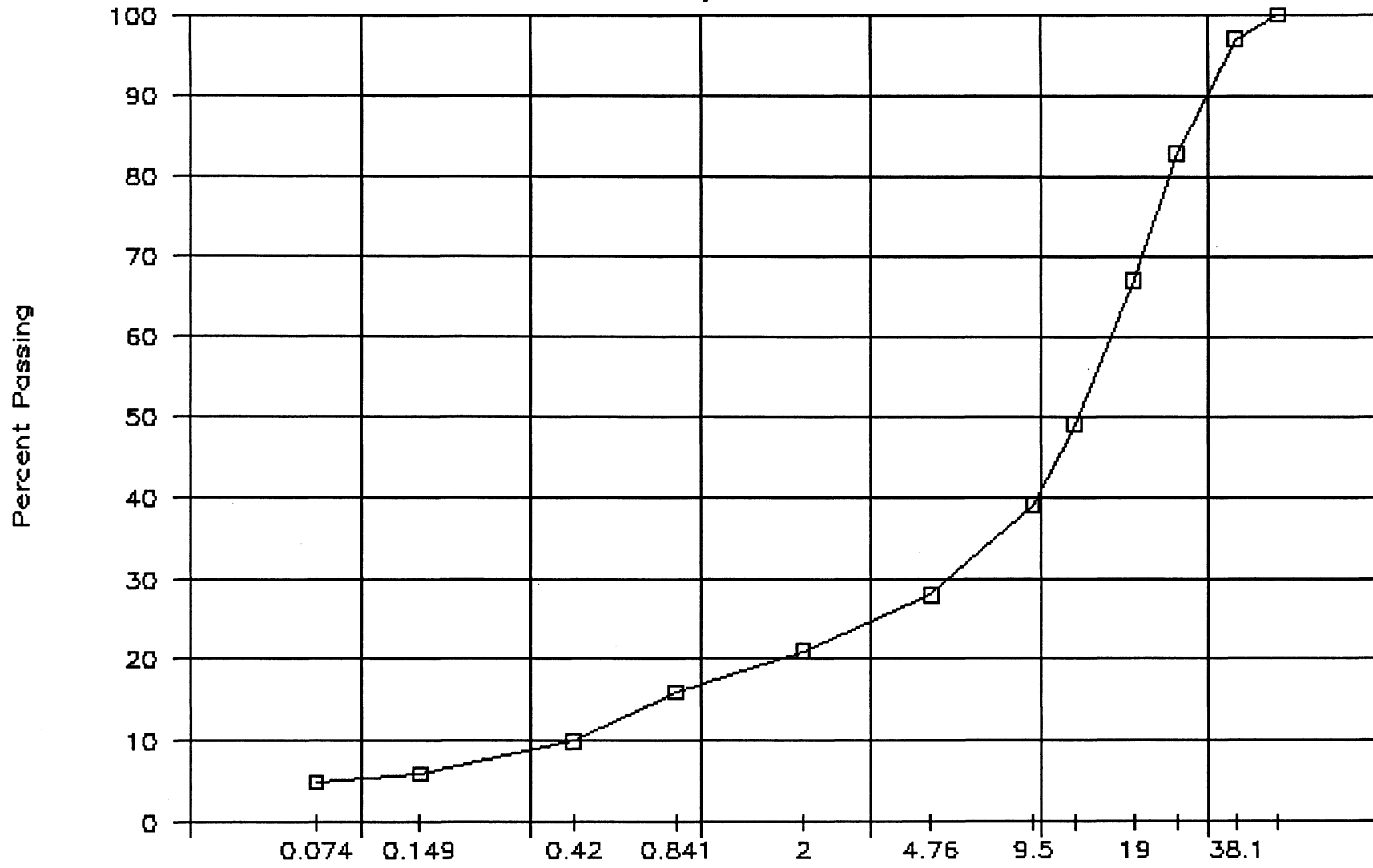
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 72  
 % SAND: 22  
 % FINES: 5

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SILT  
 & SAND (GP-GM)

# PUBLIC WORKS CANADA — WHITEHORSE, Y.T.

Grain Size Analysis — Hole 163-43



□ SAMP. 4      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-44  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 91.03.04

FIELD NO: 5  
 LAB NO: 5642  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	--
38.1	100
25.4	94
19.0	81
12.7	65
9.5	53
4.76	34
2.38	--
2.00	24
1.19	--
0.841	17
0.595	--
0.42	9
0.297	--
0.177	--
0.149	5
0.074	4

M.C. (%): --

LIMITS

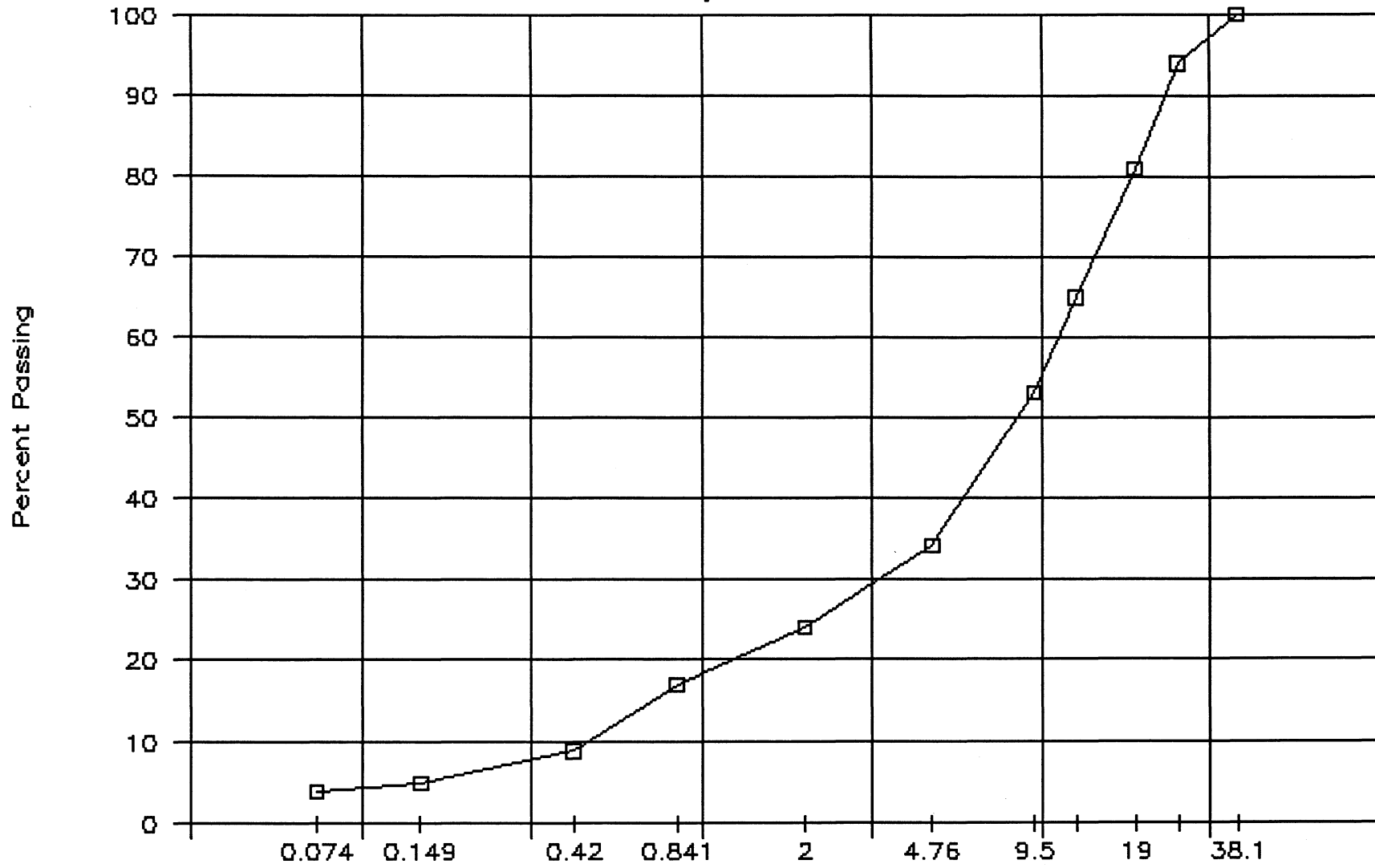
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 66  
 % SAND: 30  
 % FINES: 4

CLASSIFICATION:  
 WELL-GRADED  
 GRAVEL WITH SAND  
 (GW)

# PUBLIC WORKS CANADA — WHITEHORSE, Y.T.

Grain Size Analysis — Hole 163-44



□ SAMP. 5      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-45  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.04

FIELD NO: 6  
 LAB NO: 5643  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	--
38.1	100
25.4	91
19.0	75
12.7	60
9.5	52
4.76	37
2.38	--
2.00	28
1.19	--
0.841	21
0.595	--
0.42	12
0.297	--
0.177	--
0.149	5
0.074	3

M.C. (%): --

LIMITS

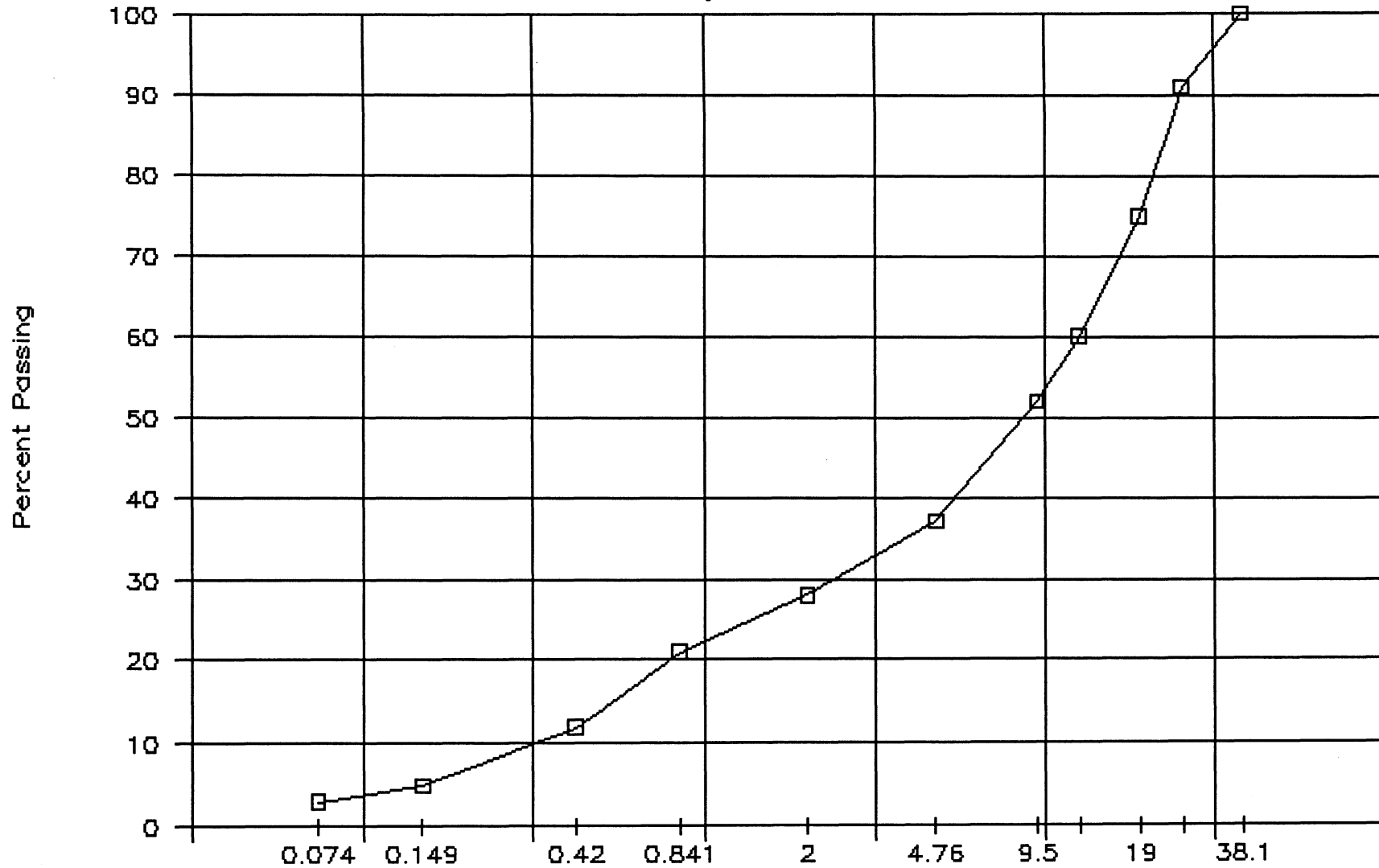
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 63  
 % SAND: 33  
 % FINES: 3

CLASSIFICATION:  
 WELL-GRADED  
 GRAVEL WITH SAND  
 (GW)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 163-45



□ SAMP. 6      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-46  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.04

FIELD NO: 7  
 LAB NO: 5634  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	--
38.1	100
25.4	93
19.0	78
12.7	66
9.5	59
4.76	38
2.38	--
2.00	26
1.19	--
0.841	18
0.595	--
0.42	11
0.297	--
0.177	--
0.149	6
0.074	5

M.C. (%): --

LIMITS

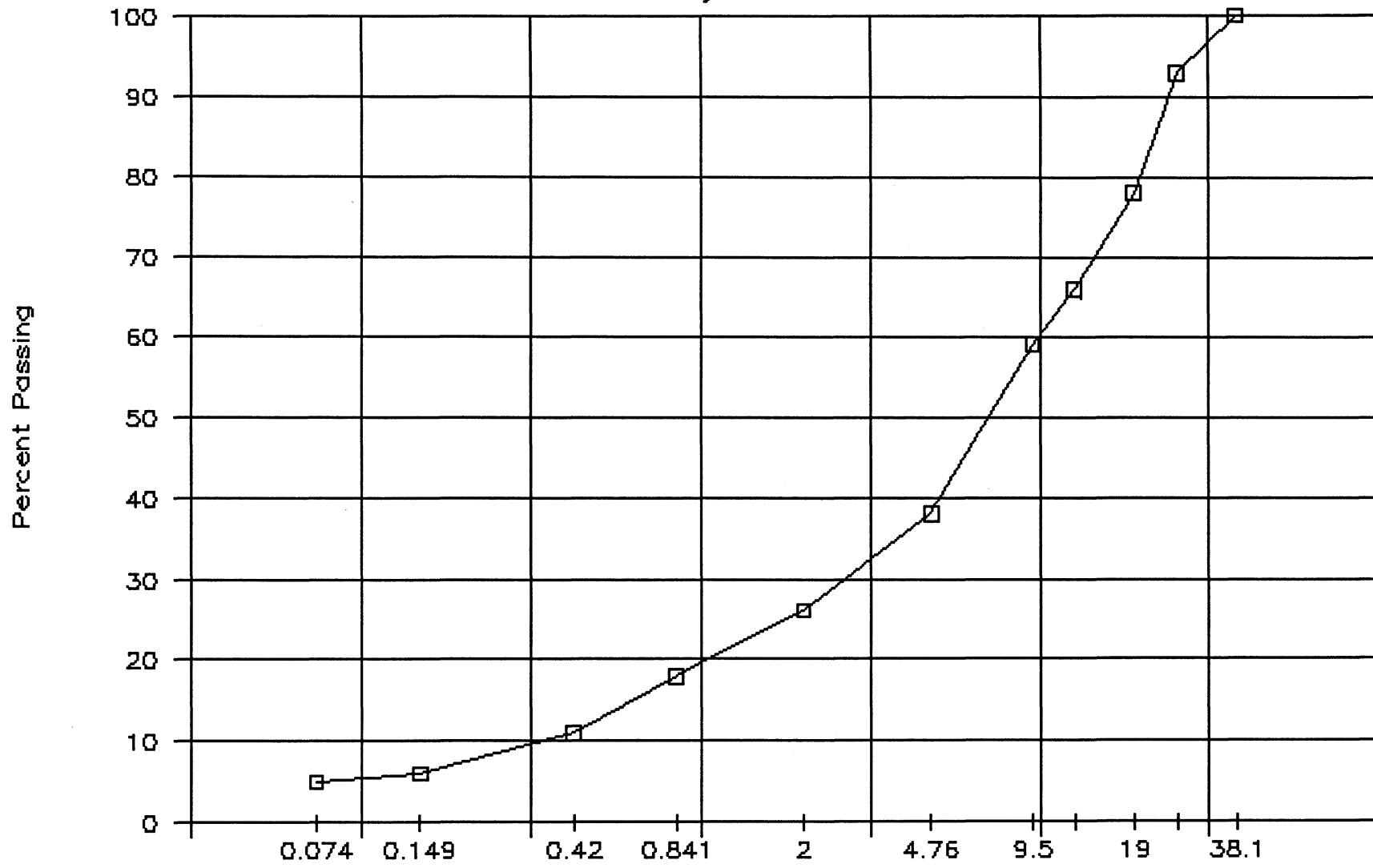
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 62  
 % SAND: 33  
 % FINES: 5

CLASSIFICATION:  
 WELL-GRADED  
 GRAVEL WITH SILT  
 & SAND (GW-GM)

# PUBLIC WORKS CANADA — WHITEHORSE, Y.T.

Grain Size Analysis — Hole 163-46



□ SAMP. 7      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-47  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.04

FIELD NO: 8  
 LAB NO: 5644  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	100
38.1	96
25.4	92
19.0	83
12.7	67
9.5	57
4.76	39
2.38	--
2.00	27
1.19	--
0.841	19
0.595	--
0.42	12
0.297	--
0.177	--
0.149	8
0.074	6

M.C. (%): --

LIMITS

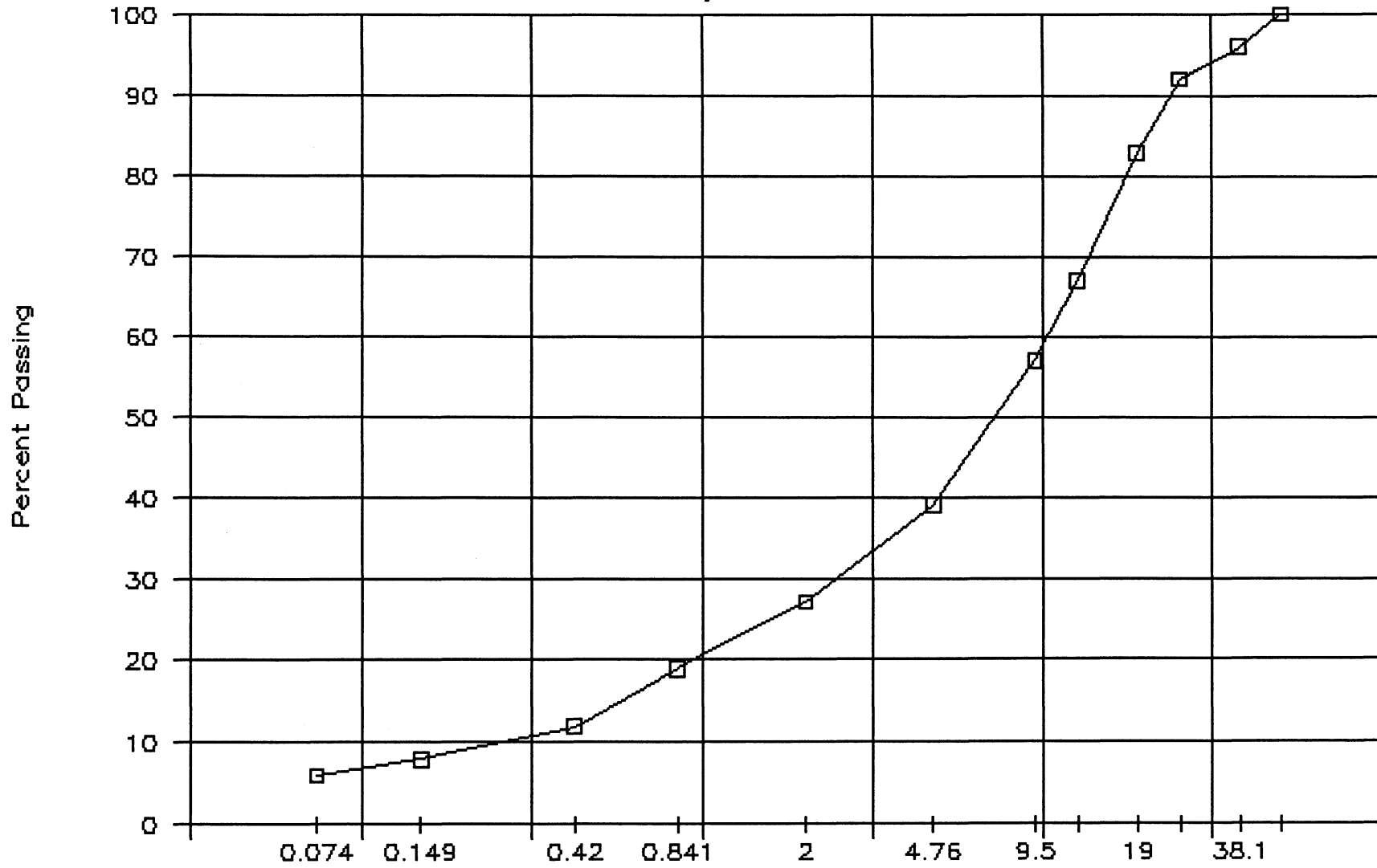
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 61  
 % SAND: 33  
 % FINES: 6

CLASSIFICATION:  
 WELL-GRADED  
 GRAVEL WITH SILT  
 & SAND (GW-GM)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 163-47



□ SAMP. 8      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-48  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.04

FIELD NO: 9  
 LAB NO: 5645  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	--
38.1	100
25.4	89
19.0	78
12.7	56
9.5	41
4.76	21
2.38	--
2.00	13
1.19	--
0.841	9
0.595	--
0.42	7
0.297	--
0.177	--
0.149	4
0.074	4

M.C. (%): --

LIMITS

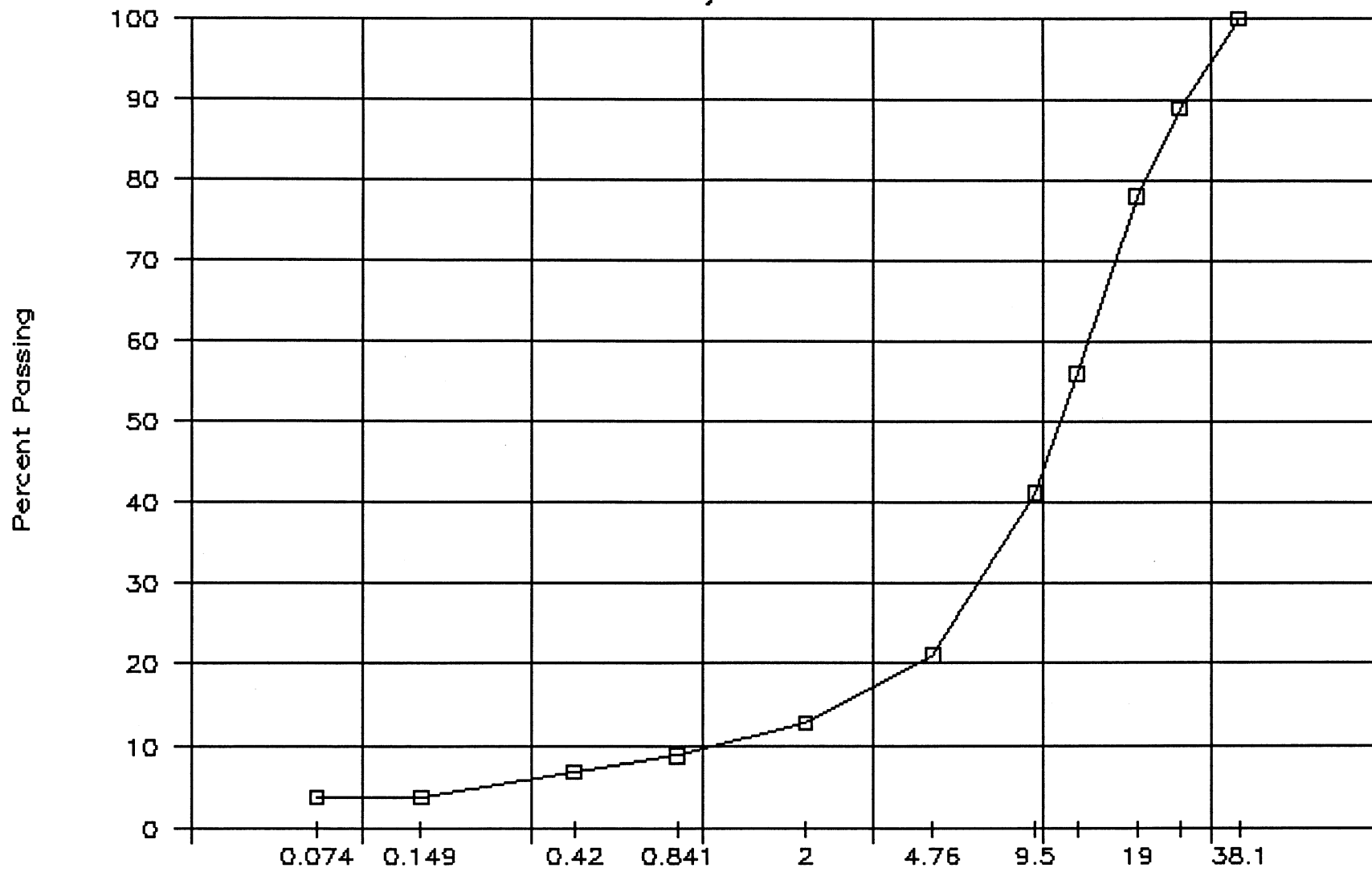
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 79  
 % SAND: 17  
 % FINES: 4

CLASSIFICATION:  
 WELL-GRADED  
 GRAVEL WITH SAND  
 (GW)

# PUBLIC WORKS CANADA — WHITEHORSE, Y.T.

Grain Size Analysis — Hole 163-48



□ SAMP. 9      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-49  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.04

FIELD NO: 10  
 LAB NO: 5646  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	--
38.1	100
25.4	91
19.0	83
12.7	61
9.5	48
4.76	31
2.38	--
2.00	23
1.19	--
0.841	17
0.595	--
0.42	10
0.297	--
0.177	--
0.149	5
0.074	4

M.C. (%): --

LIMITS

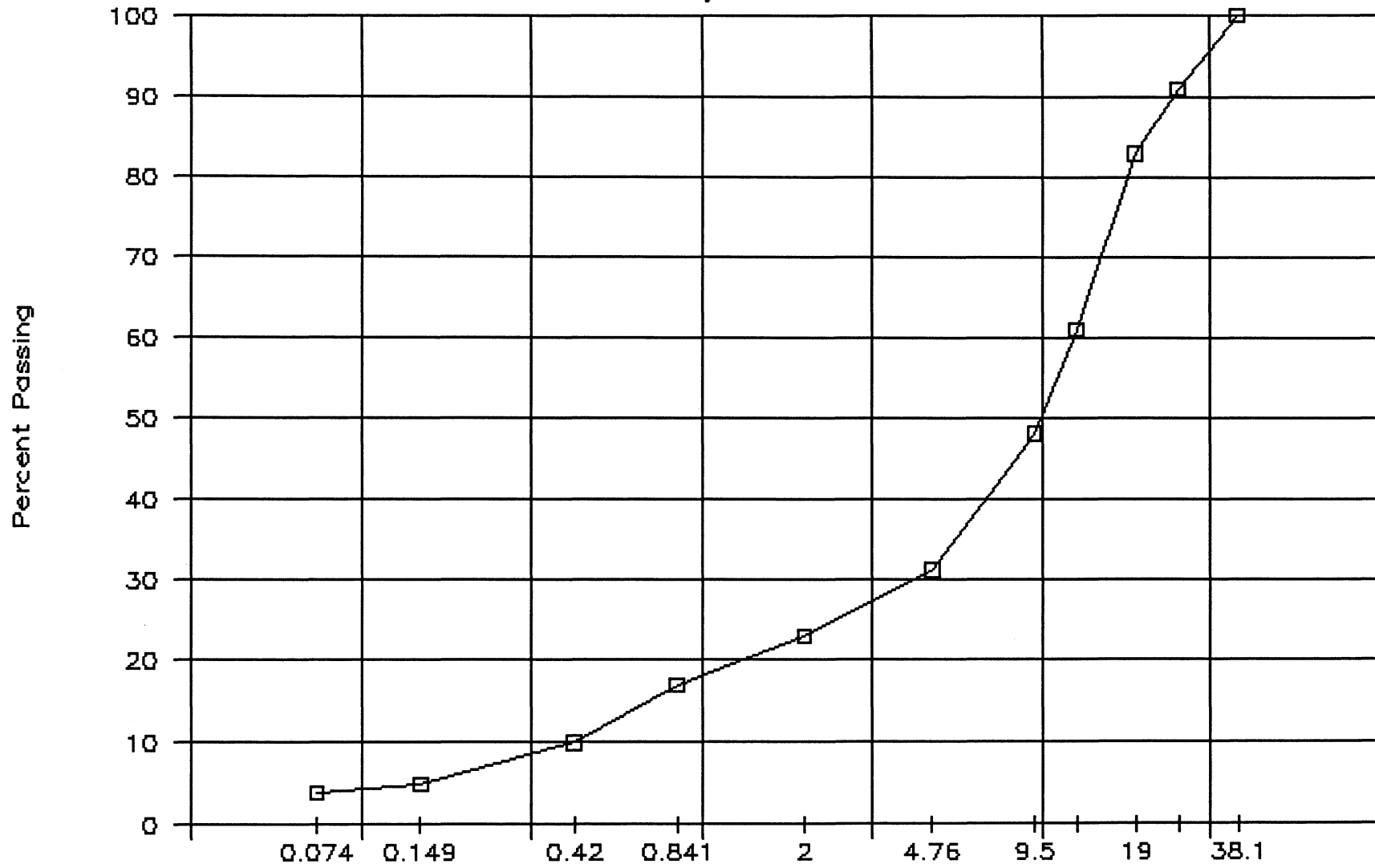
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 69  
 % SAND: 27  
 % FINES: 4

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SAND  
 (GP)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 163-49



□ SAMP. 10      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-50  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 11  
 LAB NO: 5647  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	100
38.1	95
25.4	85
19.0	74
12.7	57
9.5	47
4.76	31
2.38	--
2.00	21
1.19	--
0.841	15
0.595	--
0.42	9
0.297	--
0.177	--
0.149	5
0.074	4

M.C. (%): --

LIMITS

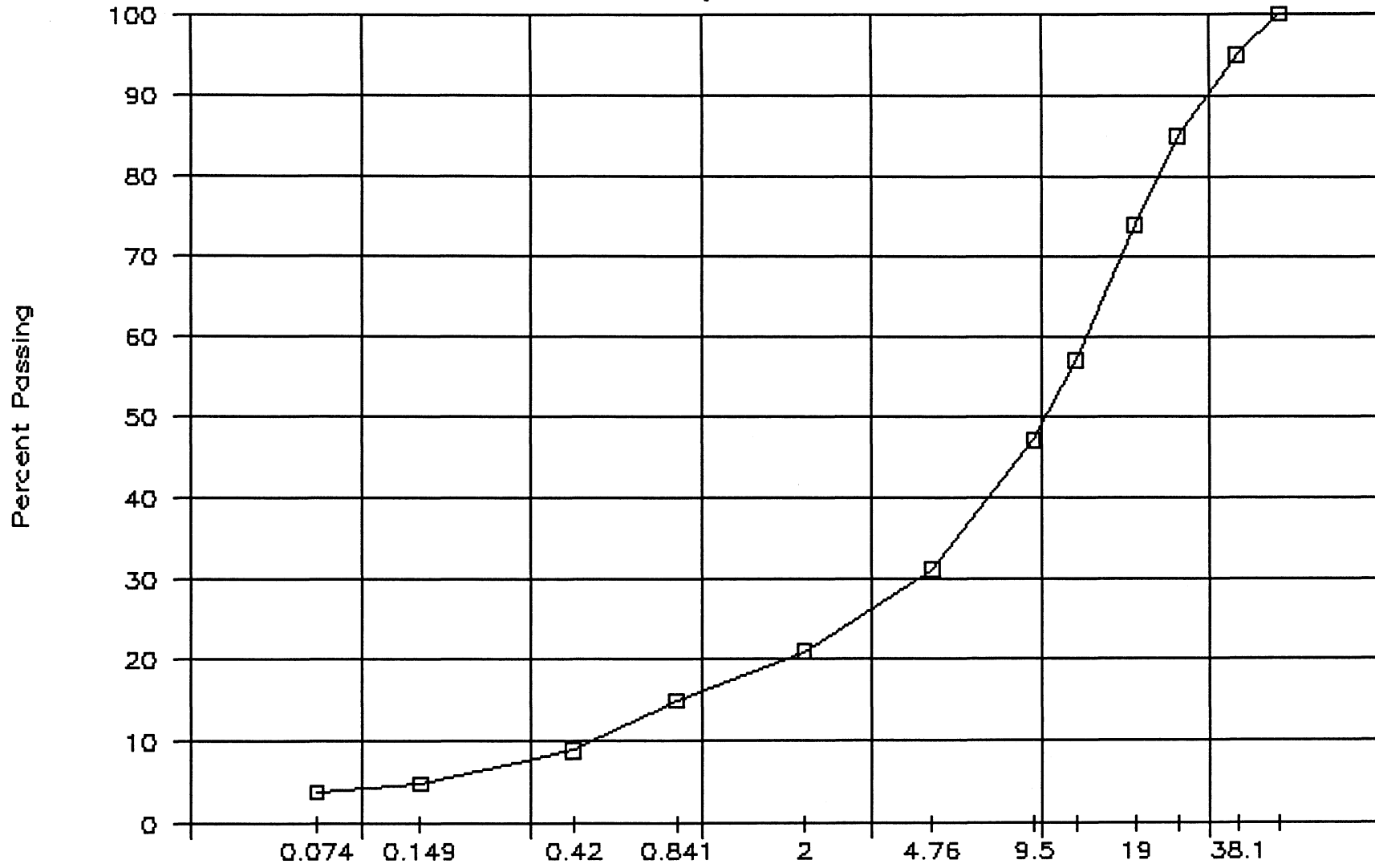
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 69  
 % SAND: 27  
 % FINES: 4

CLASSIFICATION:  
 WELL-GRADED  
 GRAVEL WITH SAND  
 (GW)

# PUBLIC WORKS CANADA — WHITEHORSE, Y.T.

Grain Size Analysis — Hole 163—50



□ SAMP. 11      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-51  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 12  
 LAB NO: 5648  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	--
38.1	100
25.4	89
19.0	83
12.7	67
9.5	55
4.76	35
2.38	--
2.00	23
1.19	--
0.841	17
0.595	--
0.42	12
0.297	--
0.177	--
0.149	8
0.074	6

M.C. (%): --

LIMITS

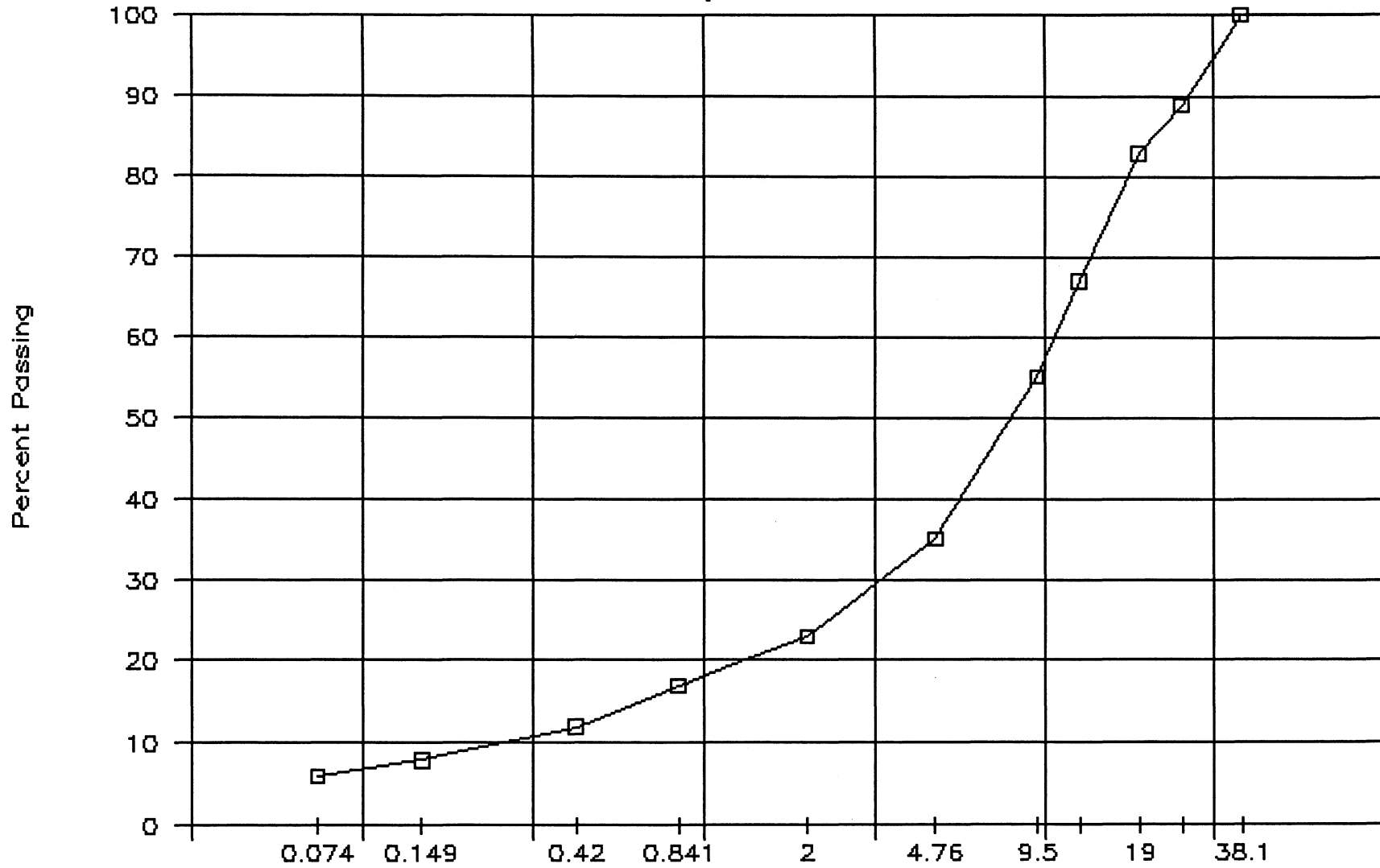
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 65  
 % SAND: 29  
 % FINES: 6

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SILT  
 & SAND (GP-GM)

# PUBLIC WORKS CANADA — WHITEHORSE, Y.T.

Grain Size Analysis — Hole 163—51



□ SAMP. 12      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-52  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 13  
 LAB NO: 5635  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	--
38.1	100
25.4	80
19.0	62
12.7	37
9.5	26
4.76	13
2.38	--
2.00	8
1.19	--
0.841	6
0.595	--
0.42	5
0.297	--
0.177	--
0.149	3
0.074	2

M.C. (%): --

LIMITS

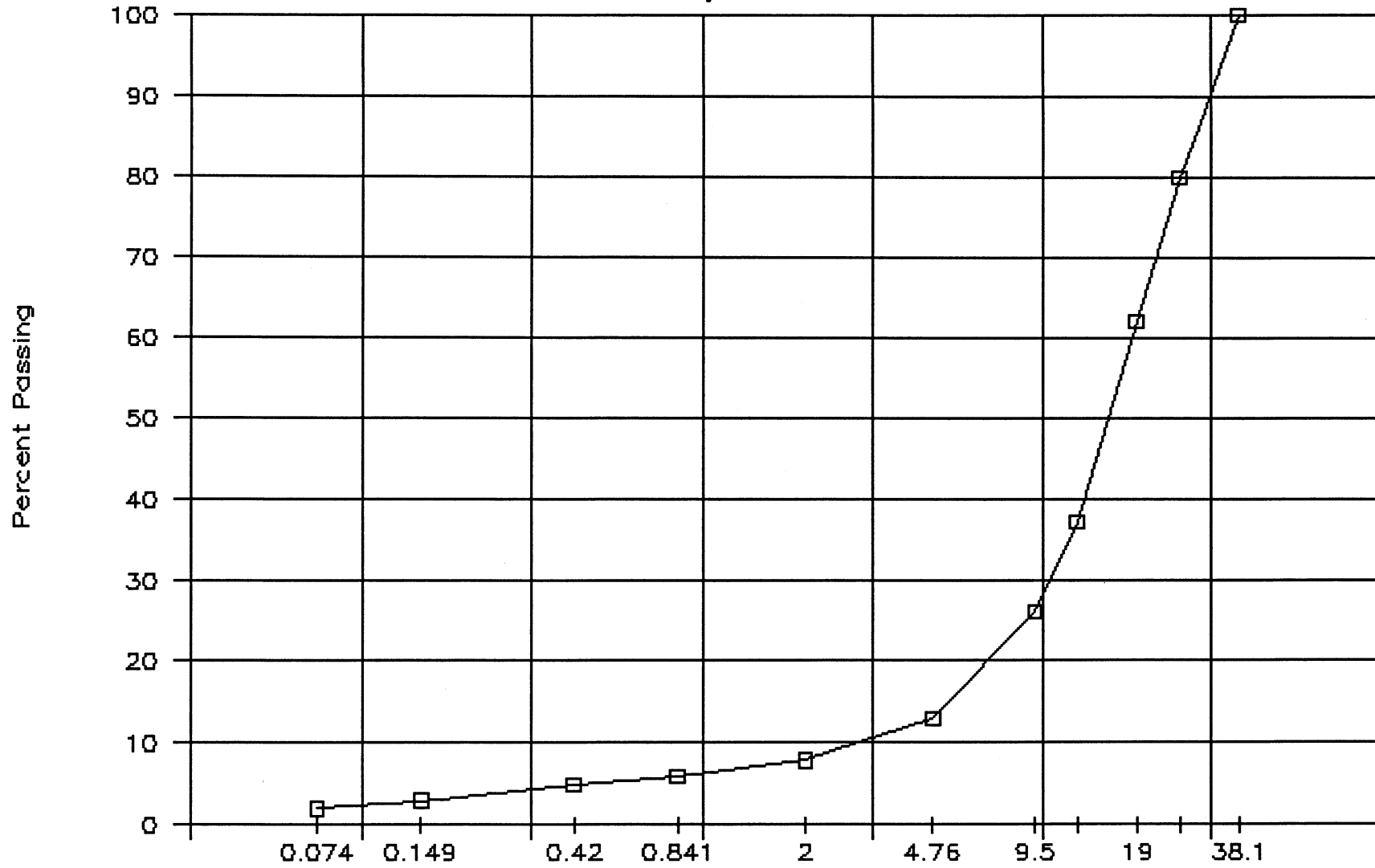
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 87  
 % SAND: 11  
 % FINES: 2

CLASSIFICATION:  
 WELL-GRADED  
 GRAVEL (GW)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 163–52



□ SAMP. 13      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-53  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 14  
 LAB NO: 5649  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	100
38.1	91
25.4	90
19.0	85
12.7	69
9.5	59
4.76	39
2.38	--
2.00	25
1.19	--
0.841	17
0.595	--
0.42	12
0.297	--
0.177	--
0.149	7
0.074	6

M.C. (%): --

LIMITS

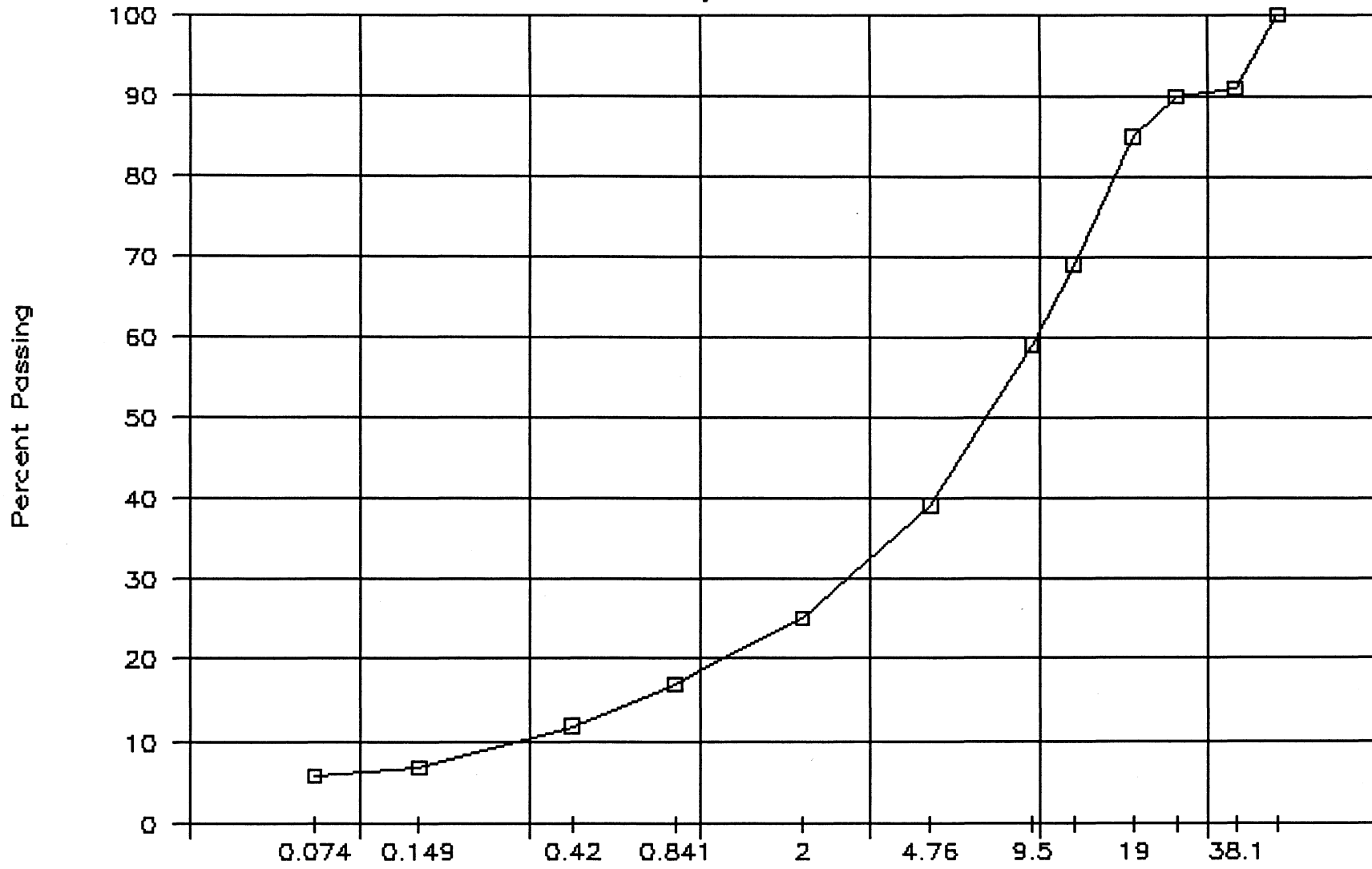
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 61  
 % SAND: 33  
 % FINES: 6

CLASSIFICATION:  
 WELL-GRADED  
 GRAVEL WITH SILT  
 & SAND (GW-GM)

# PUBLIC WORKS CANADA — WHITEHORSE, Y.T.

Grain Size Analysis — Hole 163-53



□ SAMP. 14      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-54  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 15  
 LAB NO: 5650  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

FIELD NO: ERR  
 LAB NO:  
 DEPTH:  
 TYPE: ERR

FIELD NO:  
 LAB NO:  
 DEPTH:  
 TYPE:

FIELD NO:  
 LAB NO:  
 DEPTH:  
 TYPE:

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	100
50.8	91
38.1	91
25.4	80
19.0	63
12.7	44
9.5	34
4.76	21
2.38	--
2.00	16
1.19	--
0.841	12
0.595	--
0.42	9
0.297	--
0.177	--
0.149	5
0.074	4

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	--
38.1	--
25.4	--
19.0	--
12.7	--
9.5	--
4.76	--
2.38	--
2.00	--
1.19	--
0.841	--
0.595	--
0.42	--
0.297	--
0.177	--
0.149	--
0.074	--

SIEVE SIZE	PERCENT PASSING
101.6	
76.2	
50.8	
38.1	
25.4	
19.0	
12.7	
9.5	
4.76	
2.38	
2.00	
1.19	
0.841	
0.595	
0.42	
0.297	
0.177	
0.149	
0.074	

SIEVE SIZE	PERCENT PASSING
101.6	
76.2	
50.8	
38.1	
25.4	
19.0	
12.7	
9.5	
4.76	
2.38	
2.00	
1.19	
0.841	
0.595	
0.42	
0.297	
0.177	
0.149	
0.074	

M.C. (%): --

M.C. (%): --

M.C. (%):

M.C. (%):

LIMITS  
 LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

LIMITS  
 LIQUID: --  
 PLASTIC: --  
 P.I.: --

LIMITS  
 LIQUID:  
 PLASTIC:  
 P.I.:

LIMITS  
 LIQUID:  
 PLASTIC:  
 P.I.:

% GRAVEL: 79  
 % SAND: 17  
 % FINES: 4

% GRAVEL: --  
 % SAND: --  
 % FINES: --

% GRAVEL:  
 % SAND:  
 % FINES:

% GRAVEL:  
 % SAND:  
 % FINES:

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SAND  
 (GP)

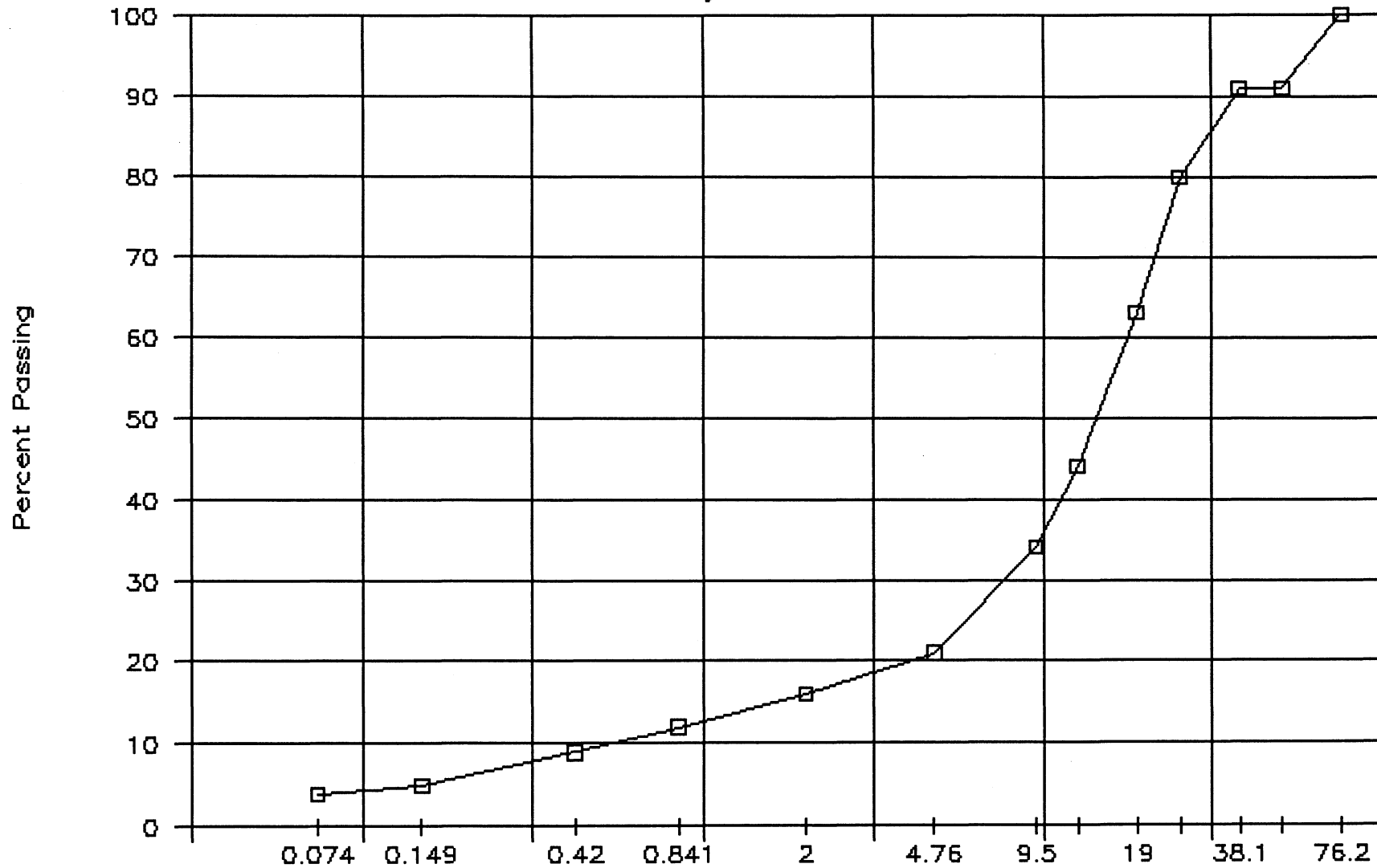
CLASSIFICATION:

CLASSIFICATION:

CLASSIFICATION:

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 163–54



□ SAMP. 15      ◇ ERR      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-55  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 16  
 LAB NO: 5651  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	--
38.1	100
25.4	83
19.0	67
12.7	41
9.5	28
4.76	13
2.38	--
2.00	8
1.19	--
0.841	6
0.595	--
0.42	5
0.297	--
0.177	--
0.149	3
0.074	2

M.C. (%): --

LIMITS

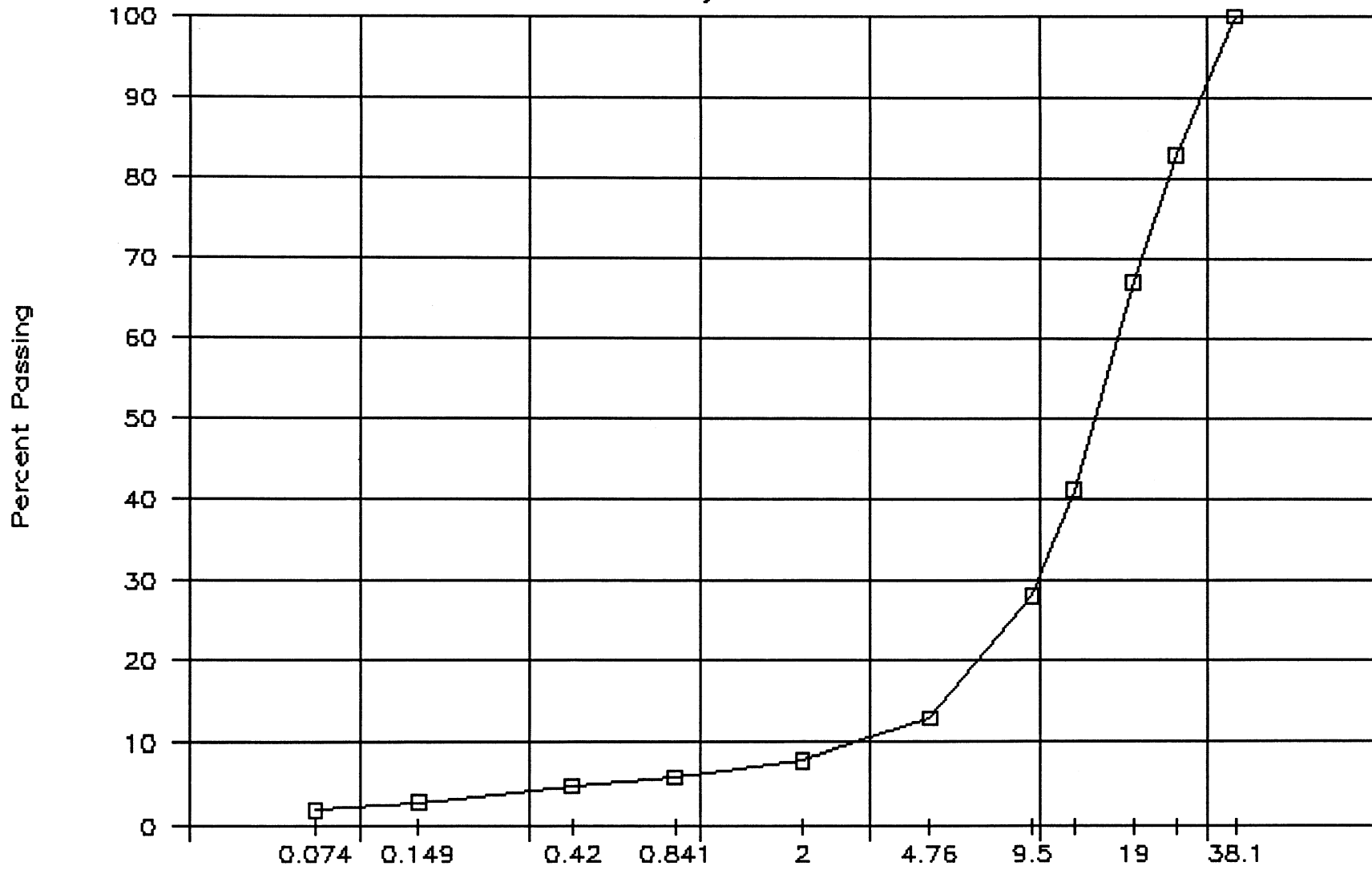
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 87  
 % SAND: 11  
 % FINES: 2

CLASSIFICATION:  
 WELL-GRADED  
 GRAVEL (GW)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 163–55



□ SAMP. 16      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-56  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 17  
 LAB NO: 5652  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	--
38.1	100
25.4	91
19.0	77
12.7	43
9.5	30
4.76	18
2.38	--
2.00	13
1.19	--
0.841	10
0.595	--
0.42	7
0.297	--
0.177	--
0.149	4
0.074	4

M.C. (%): --

LIMITS

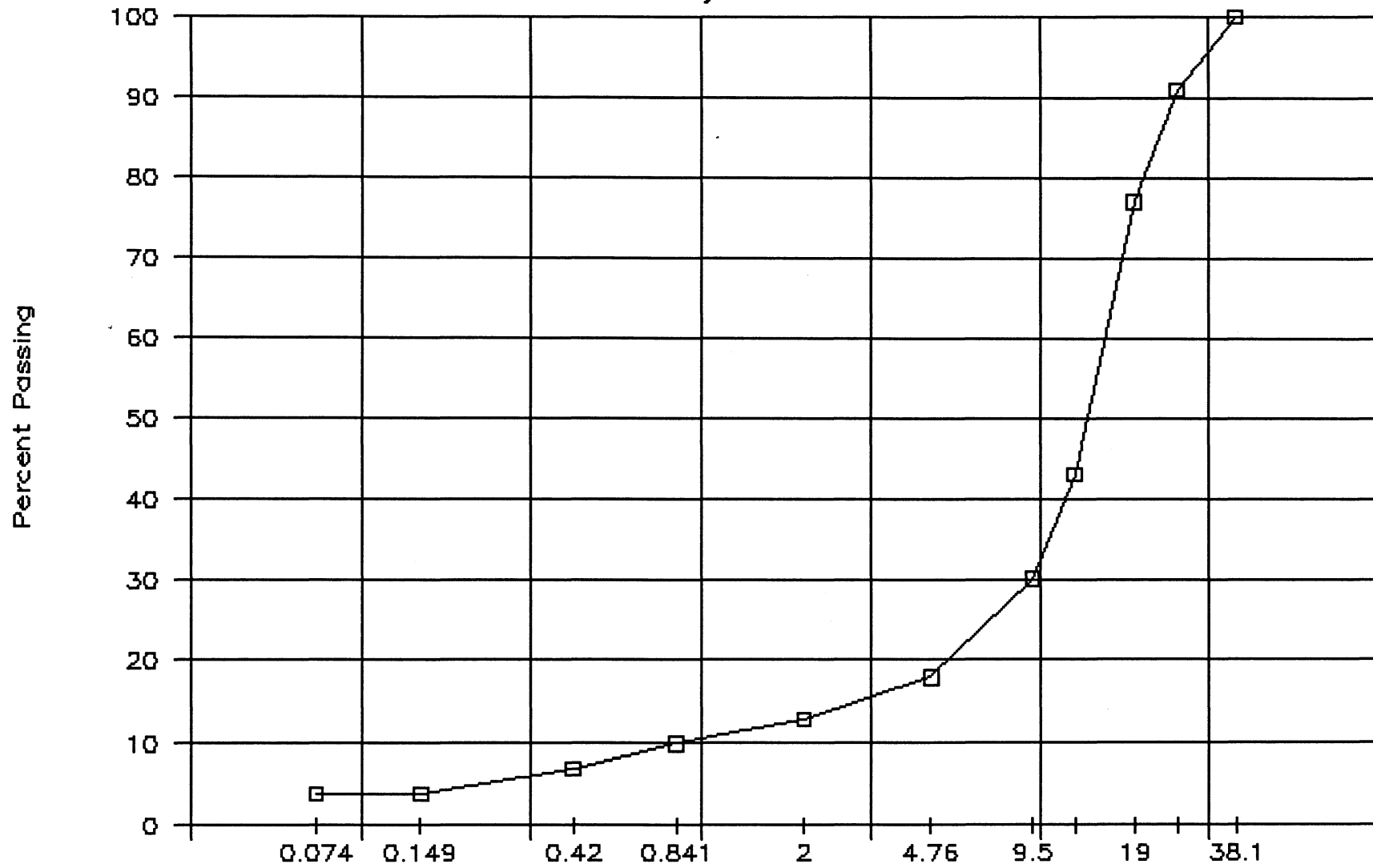
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 82  
 % SAND: 14  
 % FINES: 4

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL (GP)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 163–56



□ SAMP. 17      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-57  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 18  
 LAB NO: 5653  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	--
38.1	100
25.4	84
19.0	70
12.7	53
9.5	43
4.76	28
2.38	--
2.00	21
1.19	--
0.841	17
0.595	--
0.42	11
0.297	--
0.177	--
0.149	6
0.074	5

M.C. (%): --

LIMITS

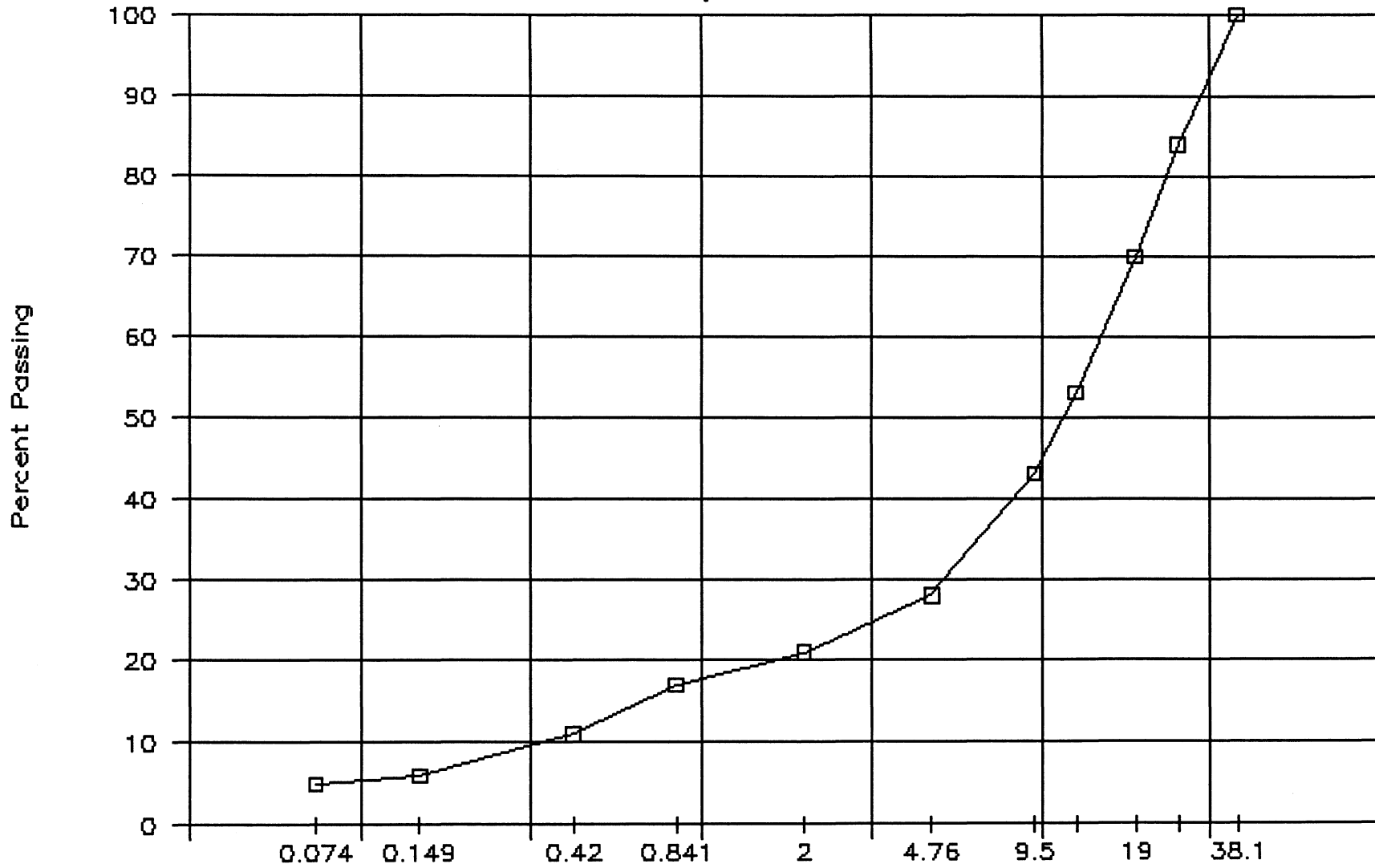
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 72  
 % SAND: 24  
 % FINES: 5

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SILT  
 & SAND (GP-GM)

# PUBLIC WORKS CANADA — WHITEHORSE, Y.T.

Grain Size Analysis — Hole 163-57



□ SAMP. 18      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 163-58  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 19  
 LAB NO: 5636  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	--
38.1	100
25.4	81
19.0	64
12.7	45
9.5	35
4.76	21
2.38	--
2.00	14
1.19	--
0.841	11
0.595	--
0.42	8
0.297	--
0.177	--
0.149	5
0.074	4

M.C. (%): --

LIMITS

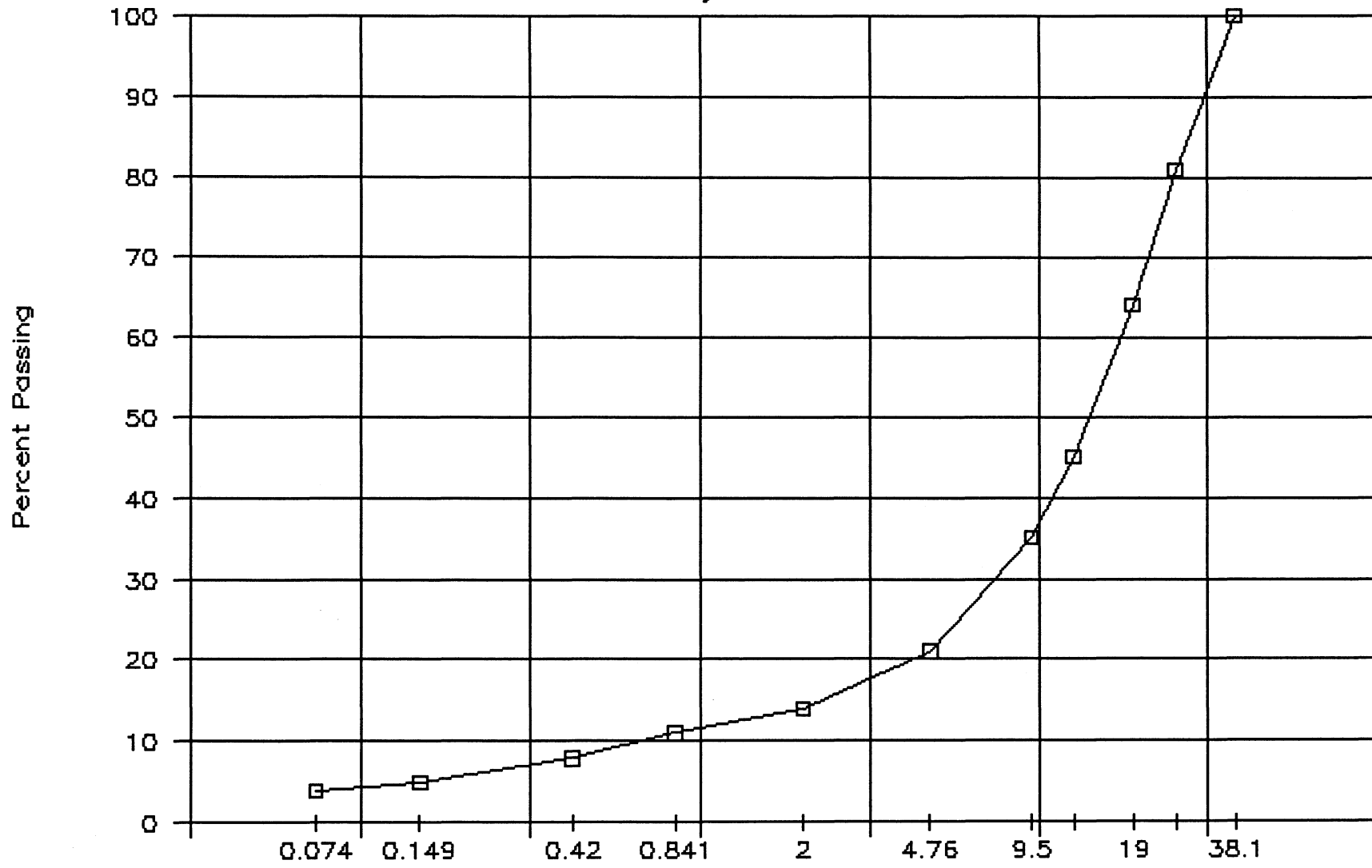
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 79  
 % SAND: 16  
 % FINES: 4

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SAND  
 (GP)

# PUBLIC WORKS CANADA — WHITEHORSE, Y.T.

Grain Size Analysis — Hole 163-58



□ SAMP. 19      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 164-59  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 20  
 LAB NO: 5654  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	--
38.1	100
25.4	74
19.0	58
12.7	37
9.5	27
4.76	16
2.38	--
2.00	13
1.19	--
0.841	10
0.595	--
0.42	7
0.297	--
0.177	--
0.149	4
0.074	3

M.C. (%): --

LIMITS

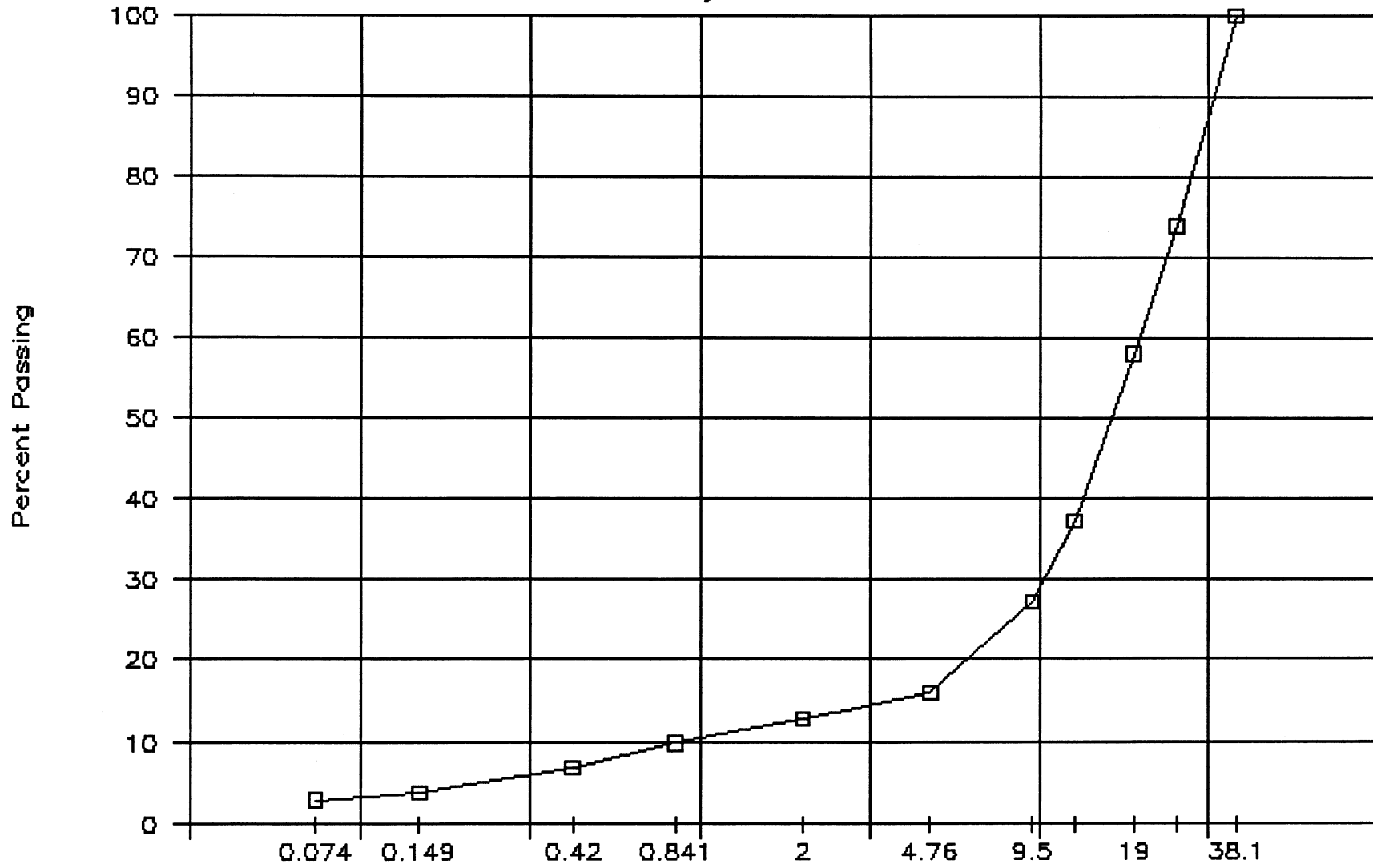
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 84  
 % SAND: 13  
 % FINES: 3

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL (GP)

# PUBLIC WORKS CANADA — WHITEHORSE, Y.T.

Grain Size Analysis — Hole 164—59



□ SAMP. 20      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 164-60  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 21  
 LAB NO: 5655  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	--
38.1	100
25.4	90
19.0	76
12.7	52
9.5	41
4.76	24
2.38	--
2.00	15
1.19	--
0.841	11
0.595	--
0.42	7
0.297	--
0.177	--
0.149	4
0.074	3

M.C. (%): --

LIMITS

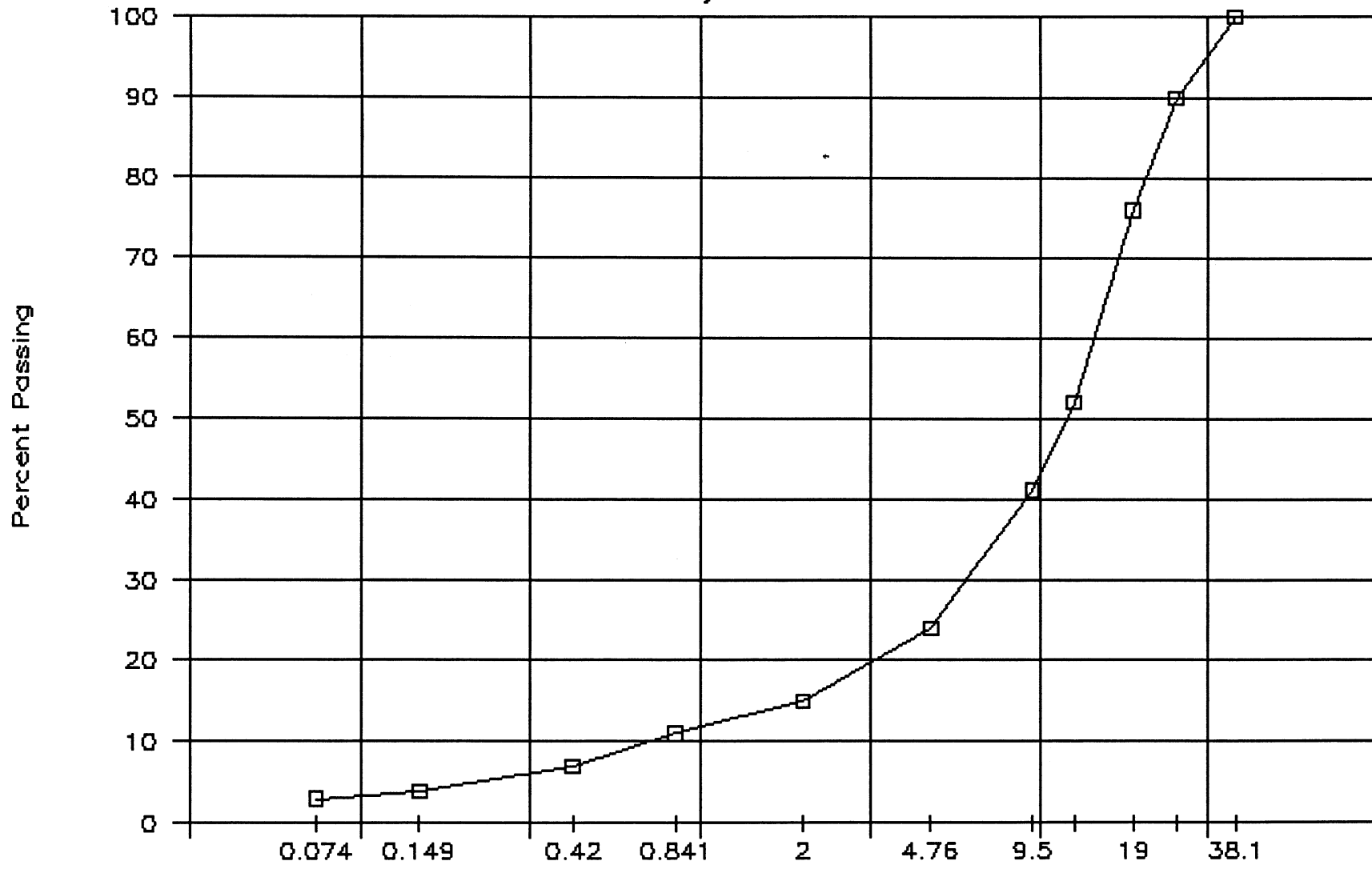
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 76  
 % SAND: 21  
 % FINES: 3

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SAND  
 (GP)

# PUBLIC WORKS CANADA — WHITEHORSE, Y.T.

Grain Size Analysis — Hole 164-60



□ SAMP. 21      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927      HOLE NUMBER: 164-61  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ      DATE COMPLETED: 92.03.05

FIELD NO: 22  
 LAB NO: 5656  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	100
38.1	95
25.4	85
19.0	77
12.7	62
9.5	50
4.76	34
2.38	--
2.00	23
1.19	--
0.841	17
0.595	--
0.42	12
0.297	--
0.177	--
0.149	8
0.074	6

M.C. (%): --

LIMITS

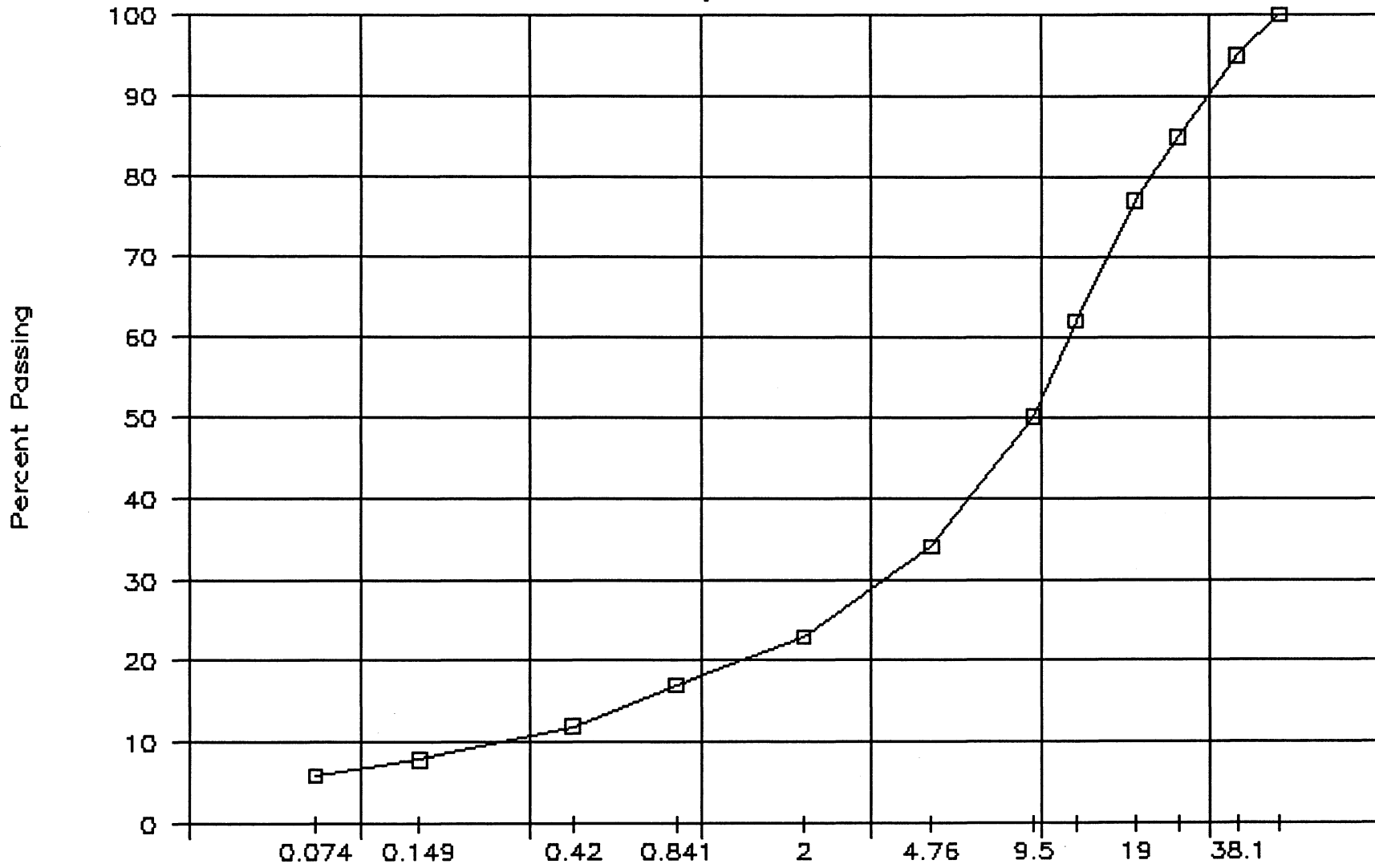
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 66  
 % SAND: 27  
 % FINES: 6

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SILT  
 & SAND (GP-GM)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 164-61



□ SAMP. 22      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 164-62  
CLIENT: SHAKWAK PROJECT  
PROJECT NAME: SEGMENT 18  
PROJECT LOCATION: 115K-01  
DRILL UNIT: 17-174  
HOLE LOCATION: SEE PLAN  
LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 23  
LAB NO: 5637  
DEPTH: 3.0-3.4  
TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	--
38.1	100
25.4	74
19.0	61
12.7	39
9.5	29
4.76	18
2.38	--
2.00	14
1.19	--
0.841	11
0.595	--
0.42	8
0.297	--
0.177	--
0.149	5
0.074	4

M.C. (%): --

LIMITS

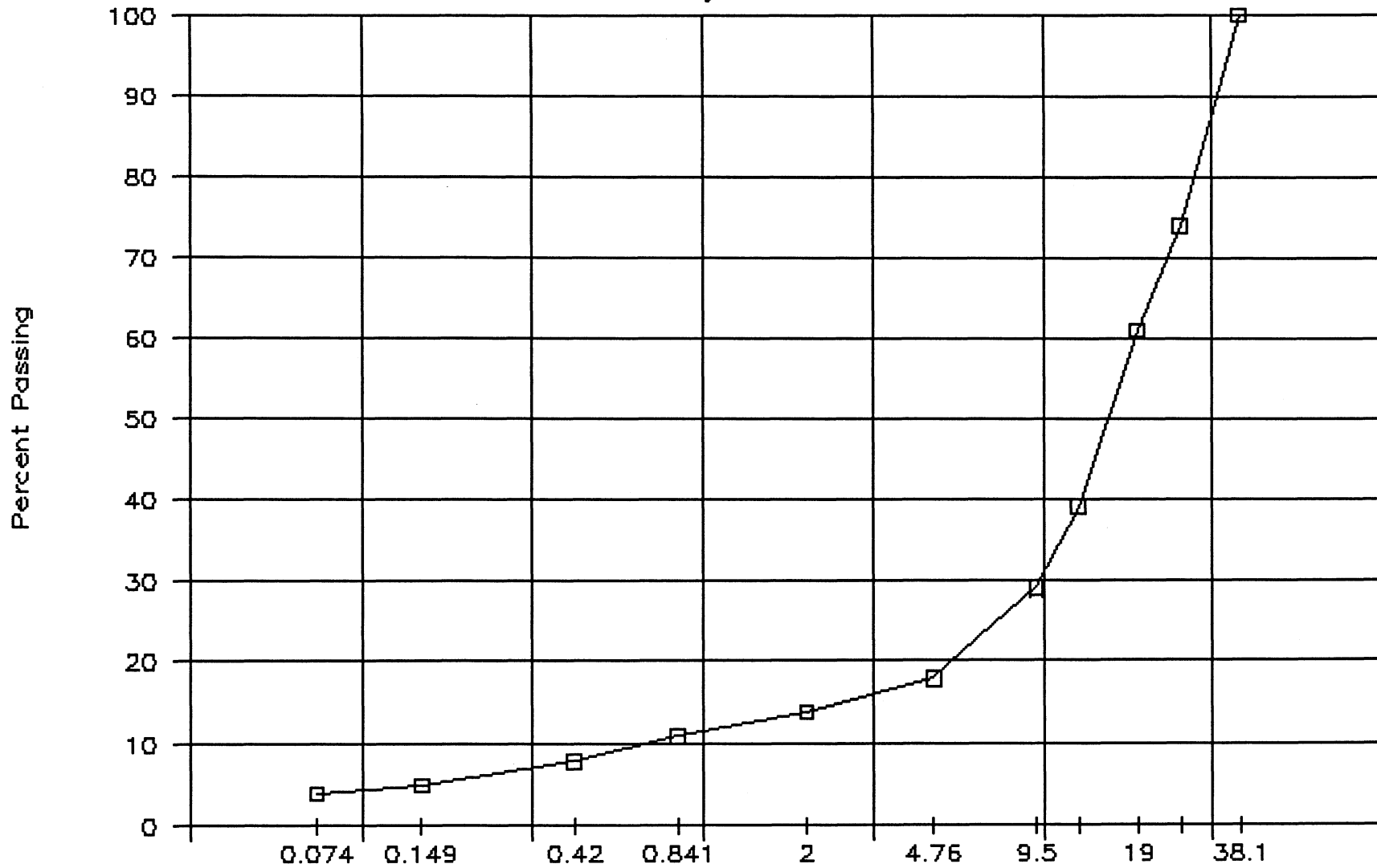
LIQUID: --  
PLASTIC: --  
P.I.: N.P.

% GRAVEL: 82  
% SAND: 14  
% FINES: 4

CLASSIFICATION:  
POORLY GRADED  
GRAVEL (GP)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 164-62



□ SAMP. 23      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 164-63  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 24  
 LAB NO: 5657  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	--
38.1	100
25.4	91
19.0	80
12.7	62
9.5	50
4.76	31
2.38	--
2.00	17
1.19	--
0.841	10
0.595	--
0.42	7
0.297	--
0.177	--
0.149	5
0.074	4

M.C. (%): --

LIMITS

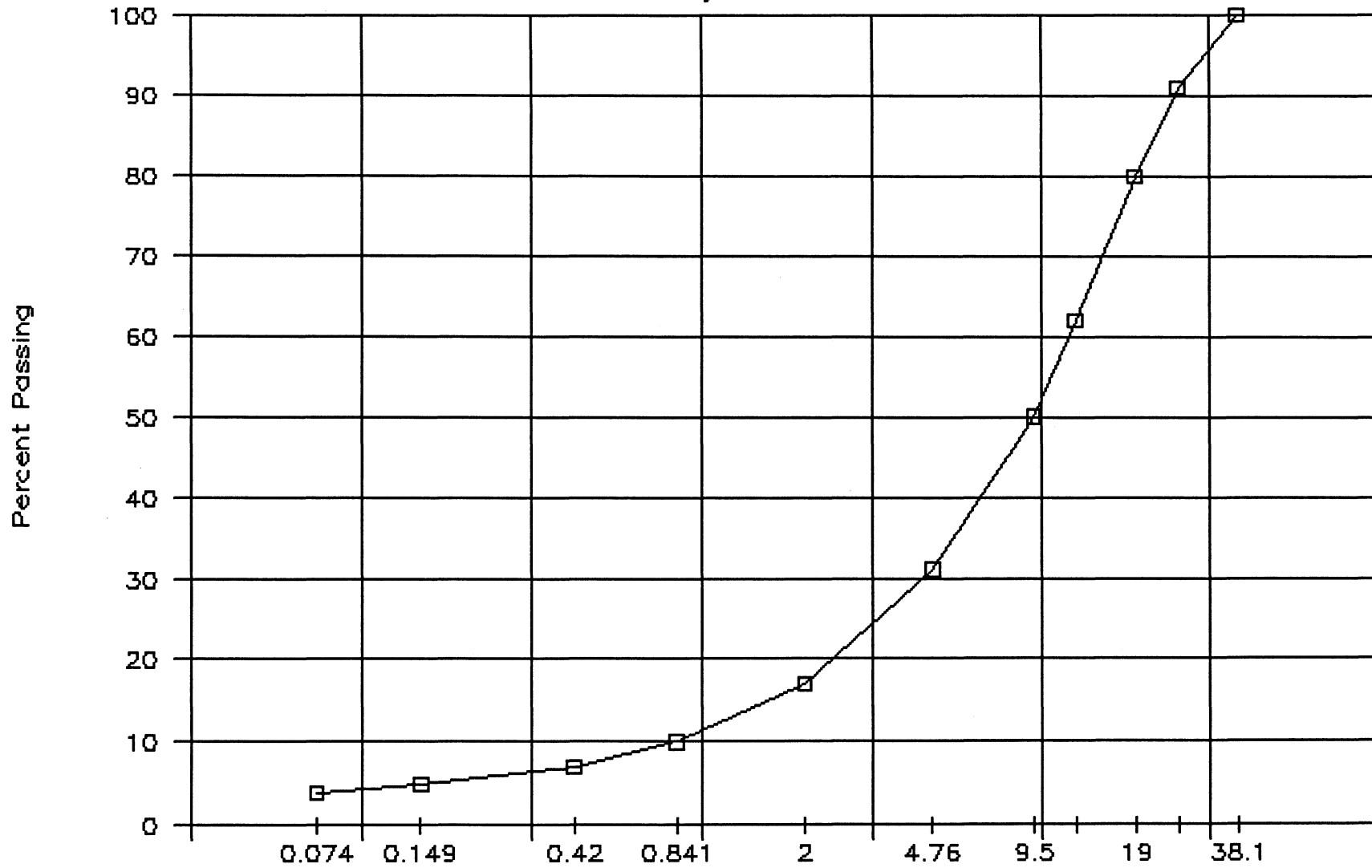
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 69  
 % SAND: 27  
 % FINES: 4

CLASSIFICATION:  
 WELL-GRADED  
 GRAVEL WITH SAND  
 (GW)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 164–63



□ SAMP. 24      ◇ SAMP.      Δ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 164-64  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 25  
 LAB NO: 5658  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	--
38.1	100
25.4	92
19.0	80
12.7	56
9.5	44
4.76	25
2.38	--
2.00	16
1.19	--
0.841	12
0.595	--
0.42	8
0.297	--
0.177	--
0.149	5
0.074	4

M.C. (%): --

LIMITS

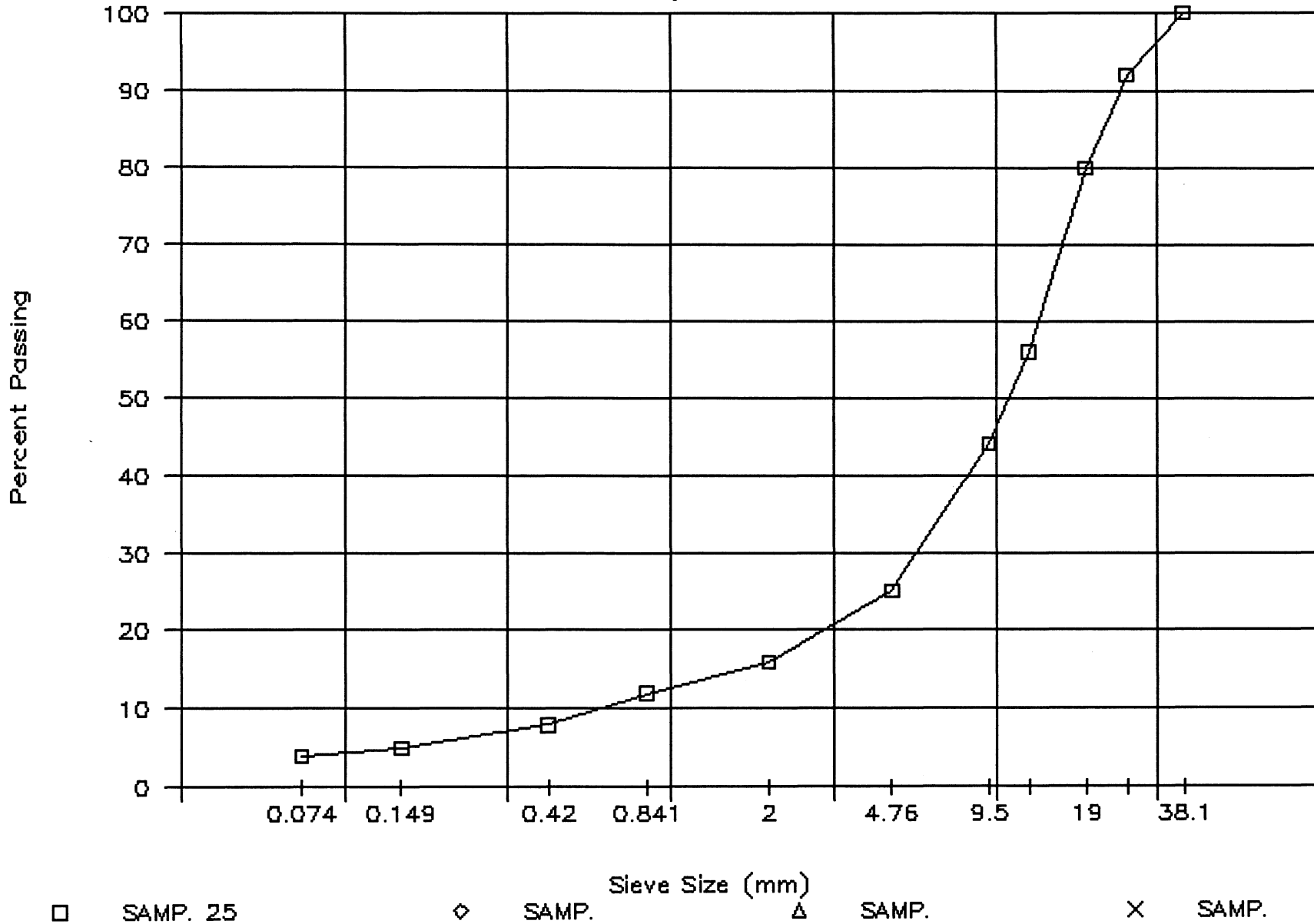
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 75  
 % SAND: 21  
 % FINES: 4

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SAND  
 (GP)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 164-64



PROJECT NUMBER: 745927 HOLE NUMBER: 164-65  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 26  
 LAB NO: 5659  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	--
38.1	100
25.4	86
19.0	72
12.7	52
9.5	39
4.76	23
2.38	--
2.00	16
1.19	--
0.841	13
0.595	--
0.42	9
0.297	--
0.177	--
0.149	5
0.074	4

M.C. (%): --

LIMITS

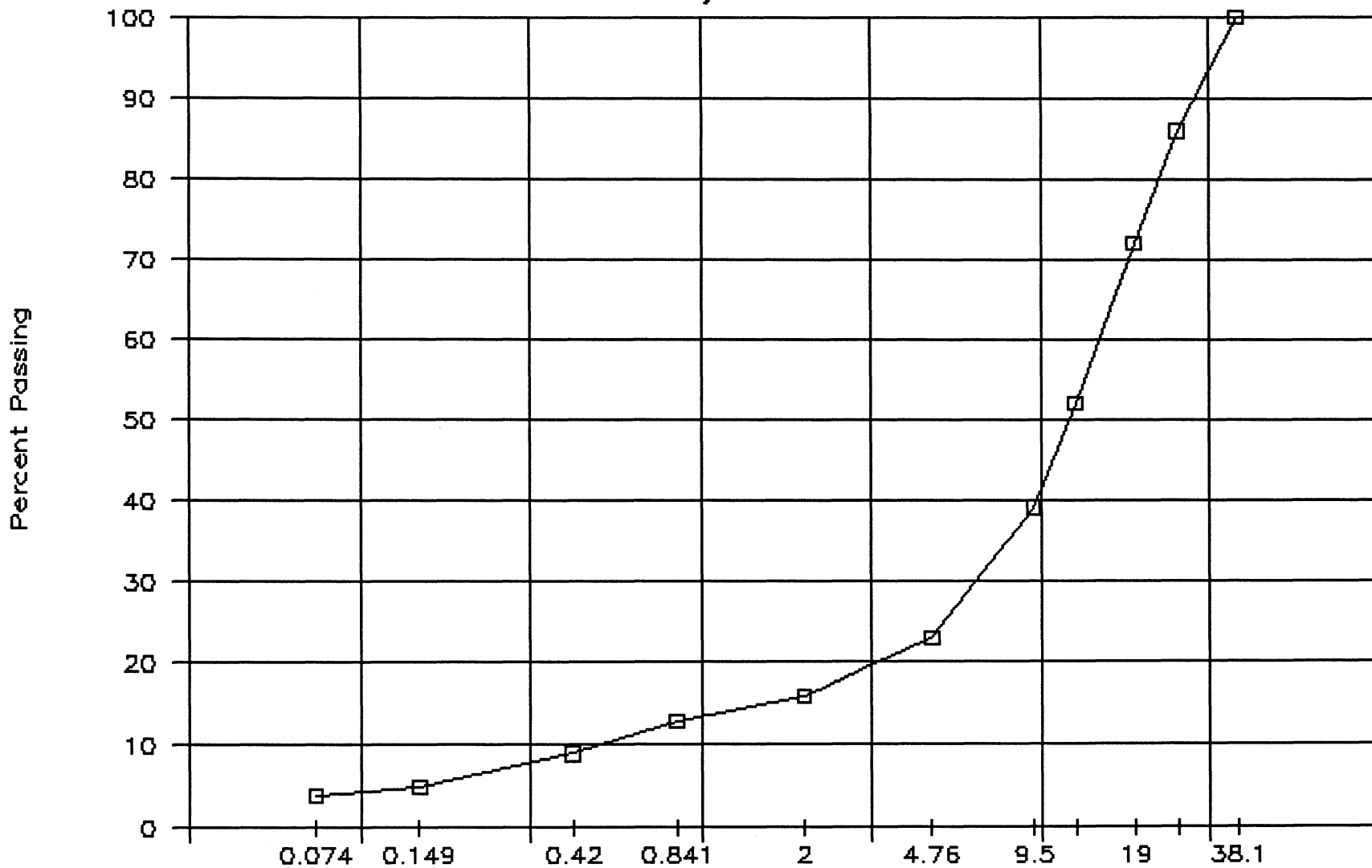
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 77  
 % SAND: 19  
 % FINES: 4

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SAND  
 (GP)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 164-65



□ SAMP. 26      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 164-66  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 27  
 LAB NO: 5660  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	--
38.1	100
25.4	87
19.0	79
12.7	54
9.5	39
4.76	23
2.38	--
2.00	16
1.19	--
0.841	12
0.595	--
0.42	9
0.297	--
0.177	--
0.149	5
0.074	4

M.C. (%): --

LIMITS

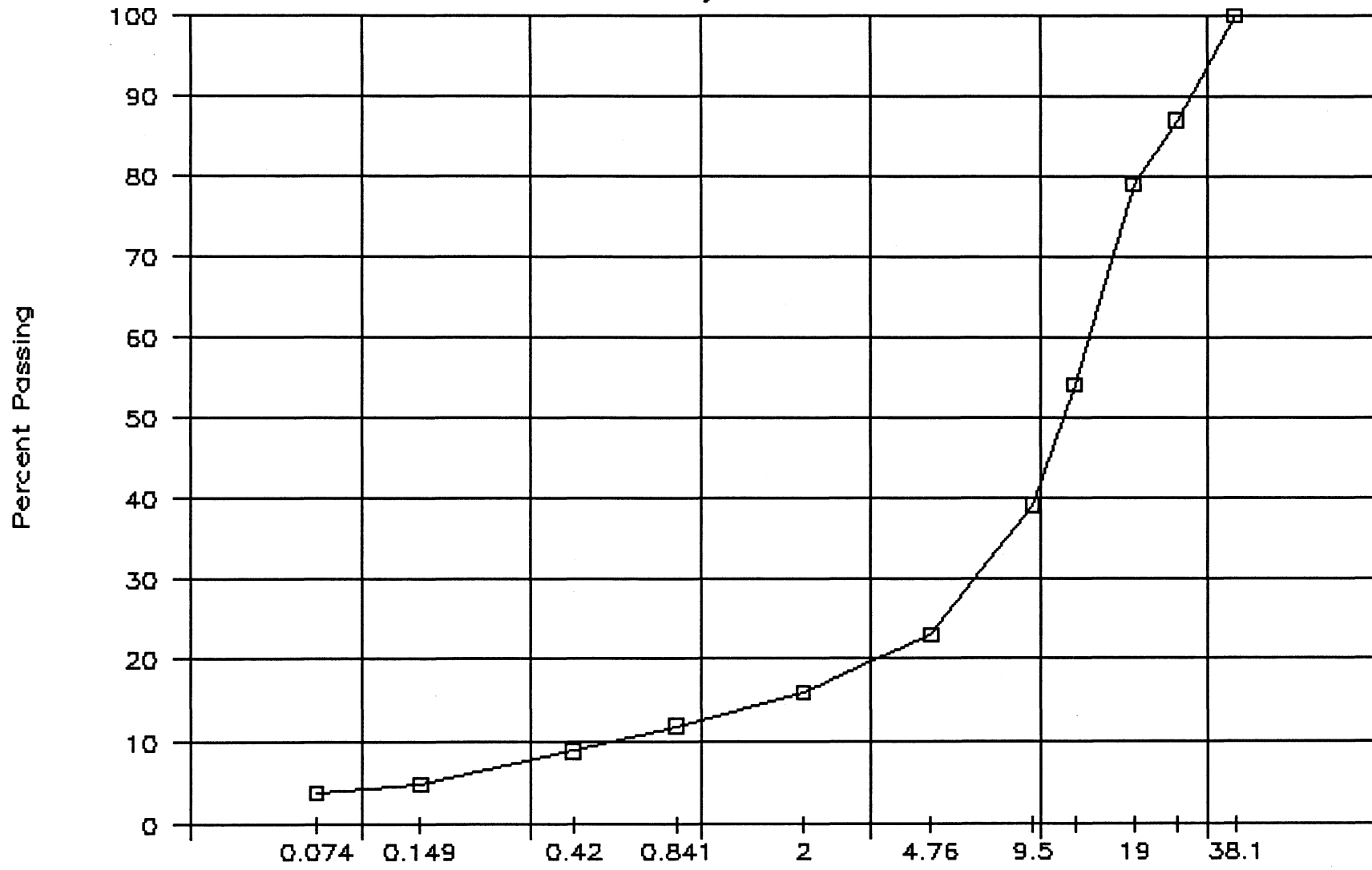
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 77  
 % SAND: 19  
 % FINES: 4

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SAND  
 (GP)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 164-66



□ SAMP. 27      ◇ SAMP.      Δ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 164-67  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 28  
 LAB NO: 5661  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	--
38.1	100
25.4	88
19.0	83
12.7	66
9.5	57
4.76	43
2.38	--
2.00	35
1.19	--
0.841	29
0.595	--
0.42	18
0.297	--
0.177	--
0.149	7
0.074	6

M.C. (%): --

LIMITS

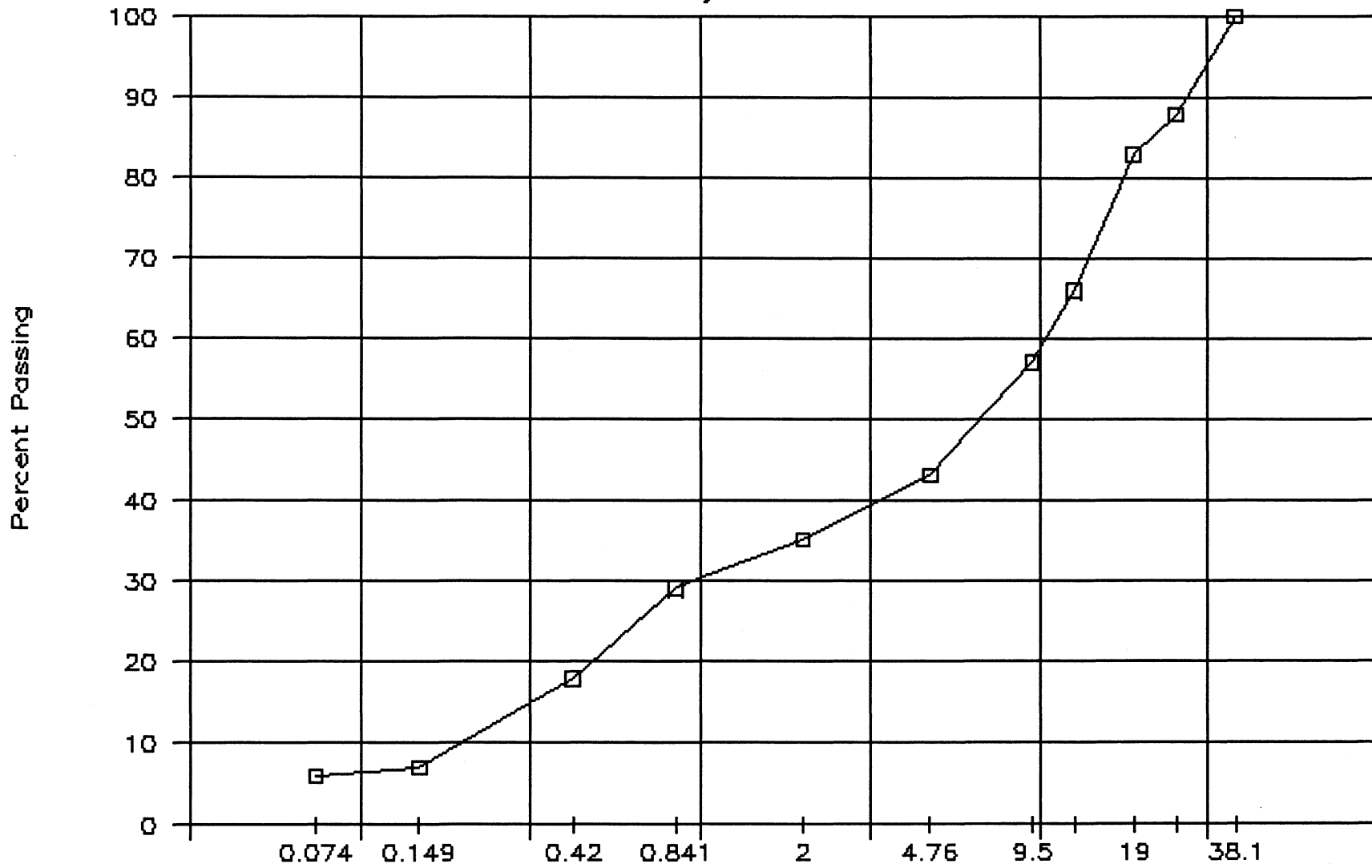
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 57  
 % SAND: 38  
 % FINES: 6

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SILT  
 & SAND (GP-GM)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 164-67



□ SAMP. 28      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 164-68  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 29  
 LAB NO: 5638  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
------------	-----------------

101.6	--
76.2	--
50.8	--
38.1	100
25.4	82
19.0	65
12.7	44
9.5	39
4.76	34
2.38	--
2.00	26
1.19	--
0.841	23
0.595	--
0.42	18
0.297	--
0.177	--
0.149	14
0.074	12

M.C. (%): --

LIMITS

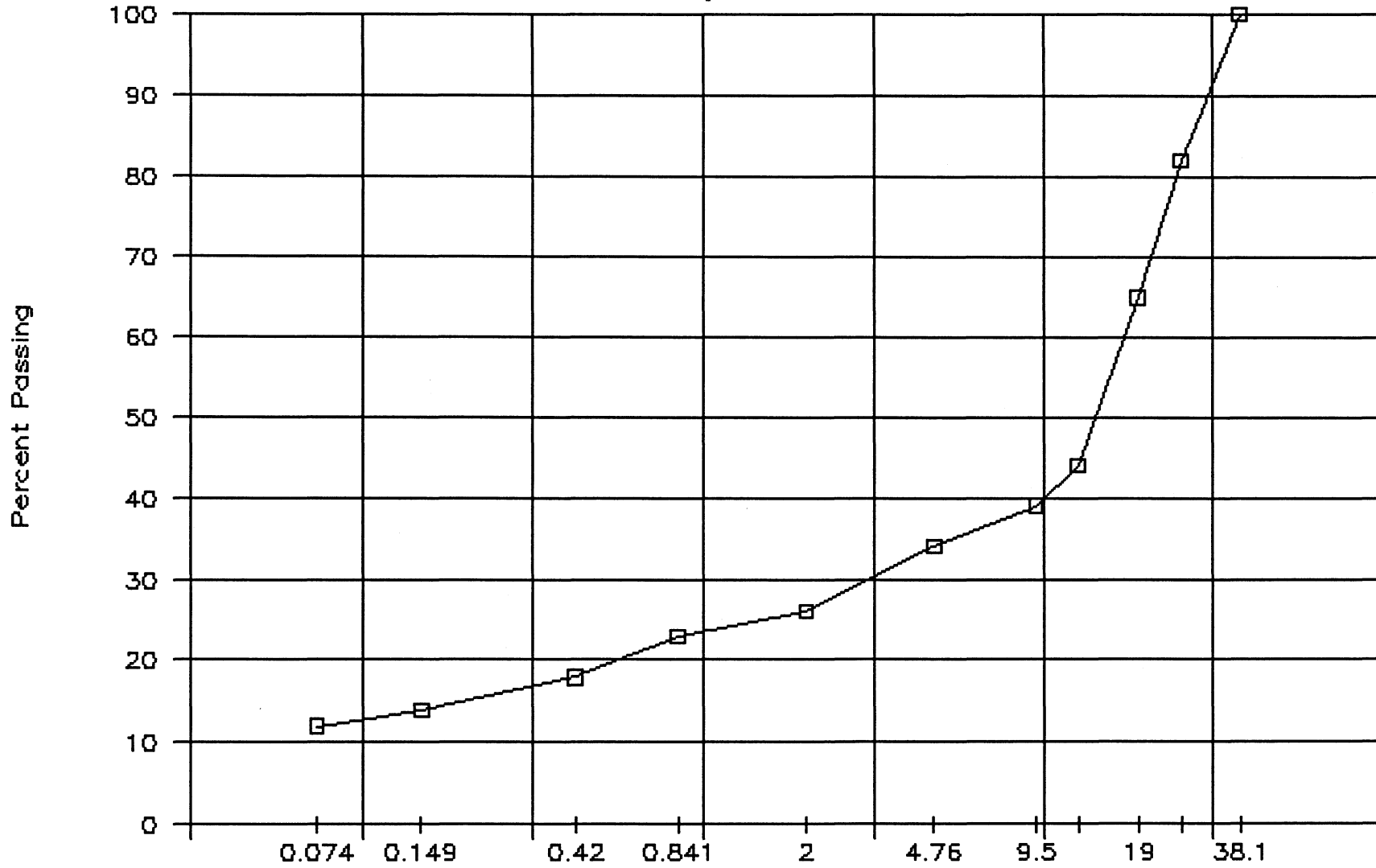
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 66  
 % SAND: 22  
 % FINES: 12

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SILT  
 & SAND (GP-GM)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 164–68



□ SAMP. 29      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 164-69  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 30  
 LAB NO: 5662  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	100
38.1	97
25.4	73
19.0	59
12.7	32
9.5	22
4.76	12
2.38	--
2.00	9
1.19	--
0.841	6
0.595	--
0.42	4
0.297	--
0.177	--
0.149	3
0.074	2

M.C. (%): --

LIMITS

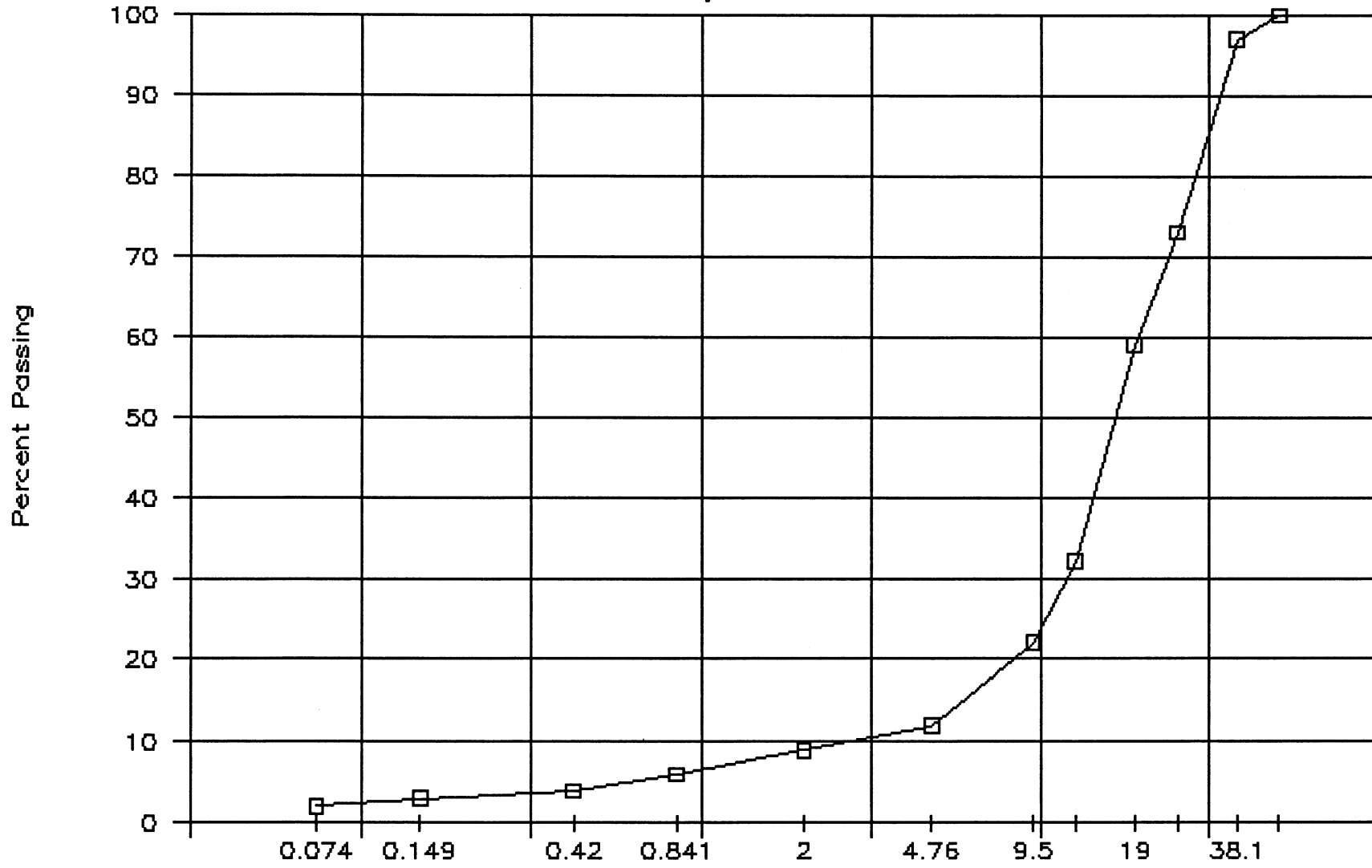
LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 88  
 % SAND: 10  
 % FINES: 2

CLASSIFICATION:  
 WELL-GRADED  
 GRAVEL (GW)

# PUBLIC WORKS CANADA – WHITEHORSE, Y.T.

Grain Size Analysis – Hole 164-69



□ SAMP. 30      ◇ SAMP.      △ SAMP.      × SAMP.

PROJECT NUMBER: 745927 HOLE NUMBER: 164-70  
 CLIENT: SHAKWAK PROJECT  
 PROJECT NAME: SEGMENT 18  
 PROJECT LOCATION: 115K-01  
 DRILL UNIT: 17-174  
 HOLE LOCATION: SEE PLAN  
 LOGGED BY: DJ DATE COMPLETED: 92.03.05

FIELD NO: 31  
 LAB NO: 5663  
 DEPTH: 3.0-3.4  
 TYPE: AUGER

SIEVE SIZE	PERCENT PASSING
101.6	--
76.2	--
50.8	100
38.1	97
25.4	90
19.0	76
12.7	53
9.5	40
4.76	22
2.38	--
2.00	14
1.19	--
0.841	10
0.595	--
0.42	6
0.297	--
0.177	--
0.149	3
0.074	3

M.C. (%): --

LIMITS

LIQUID: --  
 PLASTIC: --  
 P.I.: N.P.

% GRAVEL: 78  
 % SAND: 20  
 % FINES: 3

CLASSIFICATION:  
 POORLY GRADED  
 GRAVEL WITH SAND  
 (GP)

# PUBLIC WORKS CANADA — WHITEHORSE, Y.T.

Grain Size Analysis — Hole 164-70

