

DOCUMENT MICROFILMING IDENTIFICATION

G.I.-30 SEPT. 1976

GEOCRES No. 31E-61

DIST. 11 REGION

W.P. No. 14-85-01

CONT. No.

W. O. No.

STR. SITE No.

HWY. No. 518

LOCATION HUNTSVILLE

=====

OVERSIZE DRAWINGS TO BE INCLUDED WITH THIS REPORT.

REMARKS:

memorandum



Tel: 3731

To: J. McDougall
Head, Geotechnical Section
Northern Region

Date: 1987 09 23

Attention: E.W. Veritsky

RE: Stability of High Embankment
Sta: 19 + 120 - Sta: 19 + 220
Sec. Hwy. #518
W.P. 14-85-01
District #11 (Huntsville)

As per your request, a Foundation Investigation was carried out at this location. The overburden material was found to consist of very soft organic material (0.8 m to 1.4 m in thickness), followed by a thin layer of loose to compact silty sand. Bedrock was encountered between 1.4 m to 2.1 m below the ground surface at the boring locations.

In view of the encountered subsurface conditions, no stability problems are anticipated for the proposed 12 m high fills. The surficial organic material however, should be removed within the plan view of the embankment. The fill should consist of well compacted acceptable material and should be built with slopes not steeper than 2:1 (earth material) or 1½:1 if rock fill is used.

You were advised about our recommendations in July, 1987.

Attached, please find the Record of Borehole Sheets.

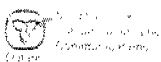
Should further information be required, please contact our office.

A handwritten signature in dark ink, appearing to read "P. Payer".

P. Payer, P. Eng.
Sr. Foundations Engineer

PP/mmj

Attach.



RECORD OF BOREHOLE No. 1

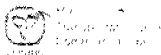
METRIC

W.P. 14-85-01 LOCATION STA: 19+18.5, 9% 30.5 LT
DIST 11 HWY 518 BOREHOLE TYPE WASH BORE - P & N X CAGING
DATUM GEOMETRIC DATE 87 05 21
ORIGINATED BY ID
COMPILED BY 4P
CHECKED BY

SOIL PROFILE			SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT 20 40 60 80 100	PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT Y	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV. DEPTH	DESCRIPTION	STRAT. PLOT	NUMBER	TYPE	'N' VALUES								
240.5	GROUND LEVEL												
0.0	ORGANICS						240						
5.0	SILTY SAND												
1.8	BOULDERS												
	MARBLE		1	DC	REC		238						
				EX	83%								
	AMPHIBOLITE												
	GNEISS		2	DC	REC								
	SOUND												
15.0	BEDROCK						236						
23.6													
4.9	END OF BOREHOLE						234						
20													
25													
30													
35													
40													
45													
50													
55													
60													
65													
70													
75													
80													
85													
90													
95													
99													

+3, x5: Numbers refer to
Sensitivity

20
15-20.5 (%) STRAIN AT FAILURE
10



RECORD OF BOREHOLE No 2

METRIC

W.P. 14-85-01

LOCATION STA: 19+170; 9' 7" LT

ORIGINATED BY DP

DIST 11 HWY 518

BOREHOLE TYPE WASHBORE - EX CASING

COMPILED BY PP

DATUM GEODETIC

DATE 87.05.22

CHECKED BY

SOIL PROFILE		SAMPLES			GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT	PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT γ	REMARKS & GRAIN SIZE DISTRIBUTION (%)
ELEV. DEPTH	DESCRIPTION	STRAT. PROF.	NUMBER	TYPE								
240.9	GROUND LEVEL											
0.0	ORGANIC MATERIAL											
0.0	SOME SAND		1	SS	2							
0.0	V. SOFT		2	SS	6							
0.0	SILTY SAND		3	SS	100							
0.0	LOOSE		4	SS	100							
2.1	MARBLE											
	SOUND											
235.9	BELLOK											
5.0	END OF BOREHOLE											

+3, x5; Numbers refer to Sensitivity

20
15-5 (%) STRAIN AT FAILURE
10



RECORD OF BOREHOLE No 3

METRIC

W P 14-85-01

LOCATION STA: 19+155; 9/5 16 RT

ORIGINATED BY DP

DIST 11 HWY 518

BOREHOLE TYPE WASHROCK - 1X; 3X CASING

COMPILED BY DP

DATUM GEOIDETIC

DATE 87 05 23

CHECKED BY

SOIL PROFILE			SAMPLES		GROUND WATER CONDITIONS	ELEVATION SCALE	DYNAMIC CONE PENETRATION RESISTANCE PLOT	PLASTIC LIMIT W _p	NATURAL MOISTURE CONTENT W	LIQUID LIMIT W _L	UNIT WEIGHT Y	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
ELEV DEPTH	DESCRIPTION	STRAT PLOT	NUMBER	TYPE								
241.0	GROUND LEVEL											
240.2	ORGANIC MATERIAL V. SOFT											
239.6	SILTY SAND		1	SS 23		240						
239.4	WEATHERED											
	GNEISS SAND		2	Bx 77%								
	BRICKS					238						
	SAND		3	Bx 100%								
236.6	BEDROCK											
236	END OF BOREHOLE					236						

OFFICE REPORT ON SOIL EXPLORATION

+3, x⁵: Numbers refer to
Sensitivity20
15-5 (%) STRAIN AT FAILURE
10

memorandum



To: K. Selby
Chief Foundation Engineer
Foundation Design Section
Room 315, Central Building

Date: July 14, 1987
File No: 3162-2-4-113


Attn: P. Payer

From: Soils and Aggregates Section
Engineering Materials Office
Room 309, Central Building

Re: Borehole Core Descriptions
HWY 518, Seguin River
WP 14-85-01

As requested by your section, core from three (3) boreholes was identified. A brief description is appended. If you have any questions, please contact me.

Bedrock is MARBLE, AMPHIBOLITE GNEISS, and BRECCIA of Archean age.



S. A. Senior
Geological Engineer

SAS
Attachment

DESCRIPTION OF ROCK CORE - WP 14-85-01

CORE DESCRIPTION		
HOLE #	DEPTH (m)	DESCRIPTION
1	1.78-3.05	MARBLE, light greyish green; medium grained, equigranular, massive.
	3.05-4.88	AMPHIBOLITE GNEISS, dark grey to black; fine to medium grained; foliated.
2	1.93-5.03	MARBLE, white to greenish white; medium to very coarse grained; interbanded with AMPHIBOLITE (15%), dark green to black; medium grained.
3	1.32-2.13	AMPHIBOLITE GNEISS, dark grey to greenish black; medium grained; foliated.
	2.13-4.42	BRECCIA, pink, spotted black; very coarse grained porphyritic, recrystallized.