

DOCUMENT MICROFILMING IDENTIFICATION

GEOCRES No. 31 F - 86

W.P. No. _____

CONT. No. _____

W. O. No. _____

STR. SITE No. _____

HWY. No. _____

LOCATION PROP. NEW CULVERT,
LOT 27, CON. 3, MARCH TWP.

OVERSIZE DRAWINGS TO BE INCLUDED WITH THIS REPORT. NONE

REMARKS: _____

BA 1454
31F-86

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OTTAWA, CANADA

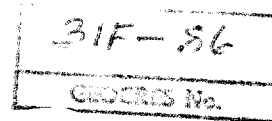
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REPORT OF SOIL INVESTIGATION

PROPOSED NEW CULVERT

LOT 27, CONCESSION 3

TOWNSHIP OF MARCH

A. J. GRAHAM, P. ENG.

CONSULTING ENGINEER

REPORT NO. S 273-62

JUNE 30th, 1962



Introduction:

At the request of Mr. A. J. Graham, P. Eng., on behalf of the Township of March, a soil investigation was conducted at the site of a concrete culvert on the Town Line between March and Torbolton Townships, 0.4 mile west of Dunrobin.

The west wall of the culvert has failed badly and the road is open to light local traffic only.

It is proposed to increase the skew of the new culvert to the north to permit a straight line flow of water through the culvert.

Fieldwork Procedure:

Two test holes were put down on diagonally opposite sides of the culvert. Hole 1 consisted of a cone probe driven to refusal and a sample hole in which casing was driven, the soils sampled and bedrock located. Hole 2 consisted of a cone probe driven to refusal to check the uniformity of the soils. The location of the holes is shown on the Test Boring Plan.

The firm of F. S. Johnston Drilling Company was employed for all drilling operations. Their work was supervised at all times by a member of our staff. The equipment used consisted of a standard drilling rig fully equipped for soil testing and mounted on a trailer.

Sampling and Testing:

Samples of the granular material were recovered by means of the split spoon sampler and retained in plastic bags. With each split spoon sample taken the standard penetration test was conducted and the results are recorded as "N" values.

A core sample of bedrock was examined, classified and retained in a core box.

A Shelby tube sample taken in the loose sand was taken to the laboratory and extruded.

Observations:

(a) Soil Types.

0	-	1'	-	Topsoil.
1'	-	4'	-	Very soft, weathered, silty clay.
4'	-	5.7'	-	Loose, saturated sand with organic (peat-like) inclusions.
5.7'	-	16'	-	Very loose, brown, saturated, medium-grained sand.
16'	-	20'	-	Medium dense, brown, saturated, fine-grained sand.
20'	-	27.5'	-	Dense, grey, saturated, fine-grained sand.
27.5'	-	29'	-	Loose, grey, saturated, fine-grained sand.
29'	-	33.5'	-	Dense, grey, saturated, fine-grained sand.
33.5'	-	39'	-	Bedrock. Interbedded dense dolomite and limestone.

Details of the bore hole and an interpretation of Hole 2 based on cone blows per foot are shown on the Soil Profile Sheets.

(b) Groundwater.

The ground water level at the completion of the investigation was found to be within a foot of the ground surface in both holes.

(c) Test Results.

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The results of the Standard Penetration Tests indicate a soil profile of medium-grained sand decreasing in grain size with depth and in general increasing in density.

Conclusions & Recommendations:

Because of the high groundwater level at this site the sand is in a "quick" condition and, therefore, is extremely unstable. If a concrete culvert is contemplated it will be necessary to support the structure on piles driven to bedrock. The piles after cut-off would be approximately 30 feet long.

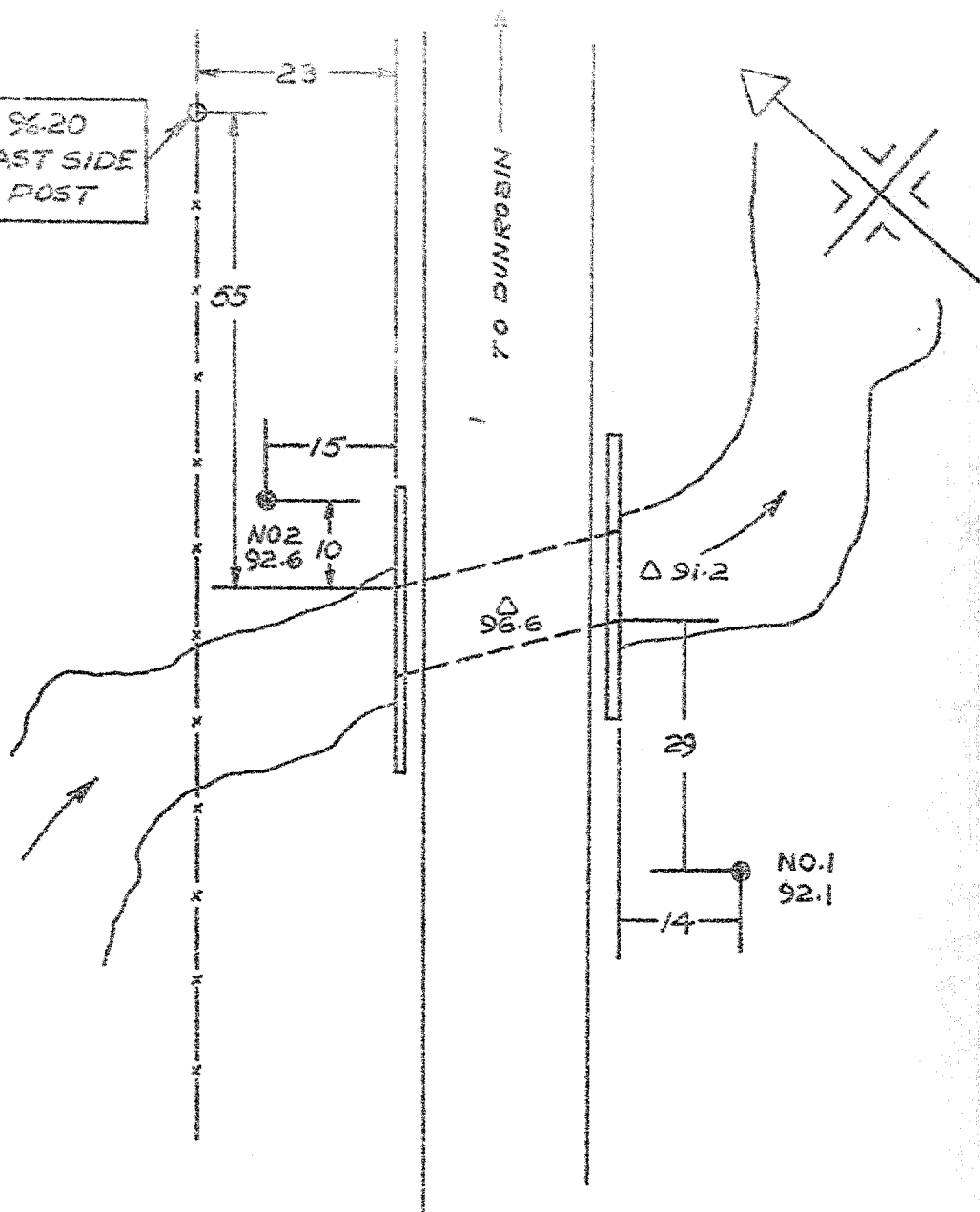
In view of the secondary nature of this road a pipe arch supported on a timber mat could be considered but settlements of up to one foot may be expected. Stabilization of the sand by chemical means is also a possibility but probably not feasible from the economic point of view.



J. D. Paterson, P. Eng.

JDP/MMC.

B.M. ELEV. 96.20
NAIL IN EAST SIDE
OF BRACE POST



TEST BORING PLAN
PROPOSED CULVERT
LOT 27 CON 3
TWP of MARCH

SCALE 1" = 20' MAY 1962

Location: 0.1 Mile west of Dunrobin
Town Line, March and Torbolton Townships
Township of March

12012

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