

DOCUMENT MICROFILMING IDENTIFICATION

GEOCRES No. 31 F - 90

W.P. No. _____

CONT. No. _____

W. O. No. _____

STR. SITE No. _____

HWY. No. _____

LOCATION PROP. NEW CULVERT &
FILL, STA. 267+29, DUNROBIN
Road

OVERSIZE DRAWINGS TO BE INCLUDED WITH THIS REPORT. NONE

REMARKS: _____

BA 1417

INSPECTION SERVICES
LABORATORY TESTING
APPRAISALS, RESEARCH
SOIL INVESTIGATIONS

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SIF-90
GEOCRES No.

REPORT OF SOIL INVESTIGATION

SITE OF PROPOSED NEW CULVERT & FILL

STATION 267 + 29

Lot 7
Jlt-12

DUNROBIN ROAD

FOR

OTTAWA SUBURBAN ROADS COMMISSION

LOT 7, CON. III
TWP TORBOLTON
Co. CARLETON

REPORT NO. S 246 - 62

OTTAWA, MARCH 14, 1962

Introduction:

At the request of Mr. J. L. Shearer, P.Eng., Ottawa Suburban Roads Commission, a soil investigation was conducted at the site of a proposed 16' x 8' x 7 1/4' culvert on a 30° skew, to replace the existing 16' x 8' x 23' structure at Station 267 + 29 on the Dunrobin Road. The additional length is necessary because of the embankment which will be formed by the addition of 10 feet of fill above the existing road grade.

Fieldwork Procedure:

Two test holes were put down at diagonally opposite sides of the existing culvert. At each location a cone probe was driven to refusal to check the uniformity of the soils and was followed by soil testing to 26.7 feet at each hole.

The firm of F. E. Johnston Drilling Co., Ltd. was employed for all drilling operations and 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:

Only cohesive soils were encountered. Five samples were recovered at 5-foot intervals in each hole by means of Shelby thin-walled tubes. These were taken to the laboratory, extruded and tested for unconfined compressive strength.

Observations:

(a) Soil Types.

Below the stream bed the clay increases in unconfined compressive strength with depth.

Details of borings and test holes are shown on the Soil Profile and Laboratory Test Sheets which form part of this report.

(b) Groundwater.

The groundwater level several days after the completion of the investigation was found to be three feet below ground surface in Hole 1.

(c) Test Results.

The results of the unconfined compressive strength tests are shown on the Soil Profile Sheets.

Conclusions and Recommendations:

The clay at Elevation 41.0 is satisfactory for the placing of footings of the new culvert and a maximum loading of 2000 lbs. / sq. ft. is recommended.

At present

At present plans call for fill over the new culvert to Elevation 59.0. This amounts to 13 feet of fill above the footing level.

A stability analysis of the clay places the maximum height of fill at 30 feet which is well above the height proposed.

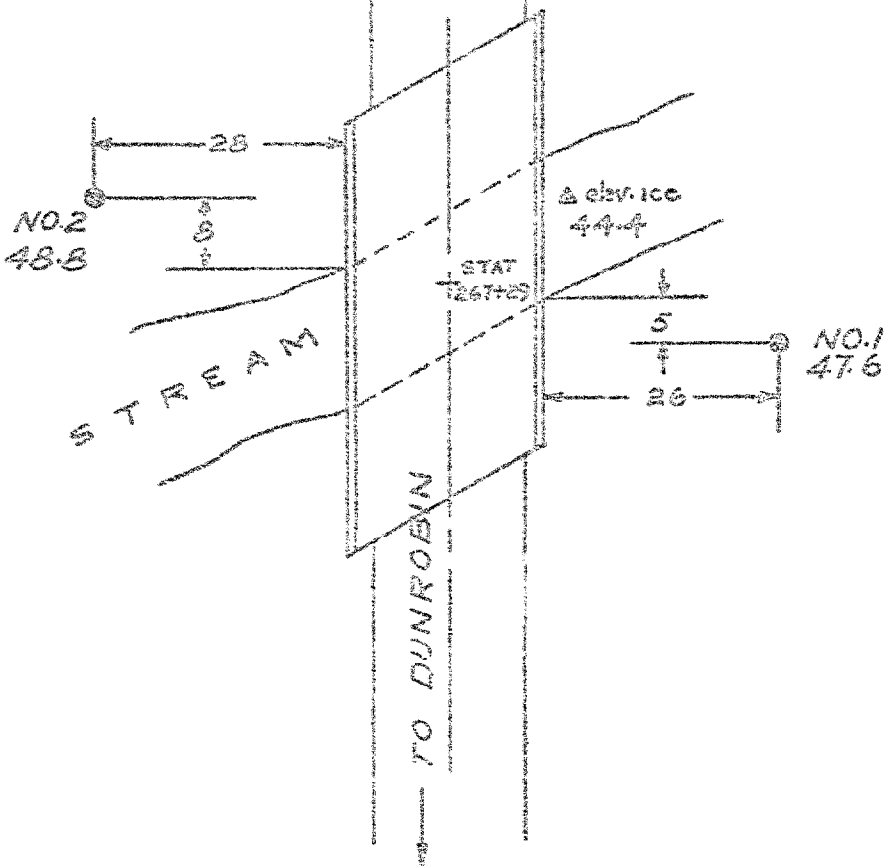
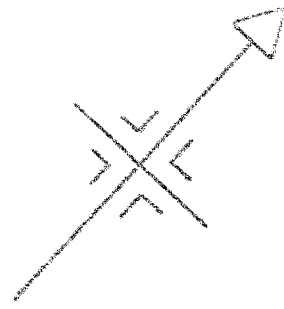
To achieve the same clearance for water flow as the existing culvert the sides of the new culvert will have to be increased from eight to ten feet.


J. D. Paterson, P. Eng.

JDP/HMG.



B.M. ELEV. 56.78
NAIL IN HYDRO POLE
45' LT. OF STA. 268+34



TEST BORING PLAN
PROPOSED CULVERT
LOT 7 CON III
TORBOLTON TOWNSHIP
DUNROBIN ROAD

CARLETON COUNTY

SCALE 1" = 20' MARCH 1962

Location: Station 267 + 29.
Dunrobin Road.

Sheet No:
1 of 2.

Hole No:
1

Remarks: Cone Probe and Test Boring.

Drilled by: P.F. Johnston Drilling Co., Ltd. Date: Feb. 22 & 23, 1962.

BLOWS PER FOOT	SOIL DESCRIPTION	Samples	Unconf. Comp. Strength lbs/Sq. Ft.	Depth in Feet	ELEV.	MOISTURE CONTENT PER CENT				
						10	20	50	60	70
Cone	Ground Surface									
93	Clayey Topsoil 1			0	47.6					
50	Stiff, weathered, silty clay. 3									
11										
5										
2	Soft to firm, weathered, silty clay. TW 2	0.82	5	42.6						
2										
2										
3										
11	8									
9										
8		TW 3	0.98	10	37.6					
6										
6										
6										
7	Firm to stiff, grey, silty to sandy clay with traces of fissuring. TW 4	0.98	15	32.6						
7										
8										
8										
10										
9		TW 5	1.60	20	27.6					
10										
10										
8										
10										
10		TW 6	0.94	25	22.6					
10										
12										
12										
12										
12				30	17.6					
14										
14										
12										
11										
11				35	12.6					
12										
50	37.3									
for 0.3' Probably glacial till.										

Ground Water
Level 3 Feet,
March 1, 1962.
Stream Bed 42.4.

JOHN D. PATTERSON
CONSULTING ENGINEERS
OTTAWA CANADA

SOIL PROFILE
&
LABORATORY TESTS

Location: Station 267 + 29.
Dubrobin Road.

ELEVATION (Zero Depth): 48.8.
Remarks: Cone Probe and Test Boring.

Sheet No:
2 of 2

Hole No:
2

Borings by: F.E. Johnston Drilling Co., Ltd.

Date: Feb. 23 & 26, 1962

BLOWS PER FOOT	SOIL DESCRIPTION	Samples	Uncon. Comp. Strength Tons/Sq.Ft.	Depth in Feet	ELEV.	MOISTURE CONTENT PER CENT.				
						30	40	50	60	70
Cone	Ground Surface									
37	Clayey Topsoil	1		0	48.8					
7	Firm partially weathered, silty to sandy clay.	TW 7	(2.48 pp 0.78 pp)	3						
5				6						
5										
5										
5										
6		8								
5	Soft to firm grey, silty clay.	TW 8	1.11	9	39.8					
7										
9										
11		13		12						
9	Firm to stiff, grey, silty clay with black organic mottling and traces of fissuring.	TW 9	1.29	15						
12										
12										
12										
14										
12				18	30.8					
13		TW 10	1.22	21						
12										
13										
13										
12										
14		TW 11	1.62	24						
14										
15										
16				27	21.8					
15										
15				30						
16										
16				33						
18										
17										
16				36	12.8					
18										
17				39						
17										
16				42						
16										
15										
20	Probably glacial till.			45	1.4					
20										

Stream Bed 42.4.

Keep:

PR

Rockwell
Penetrometer