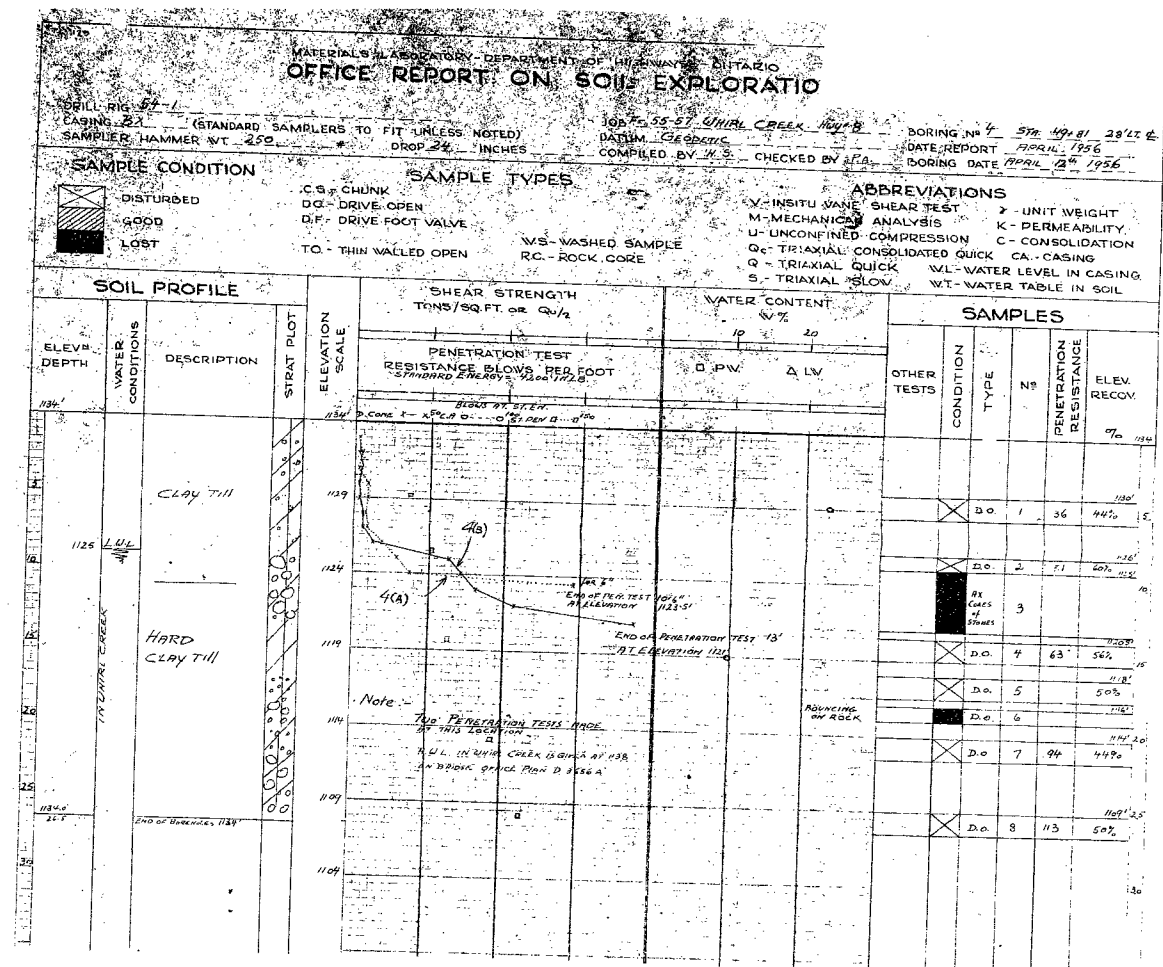
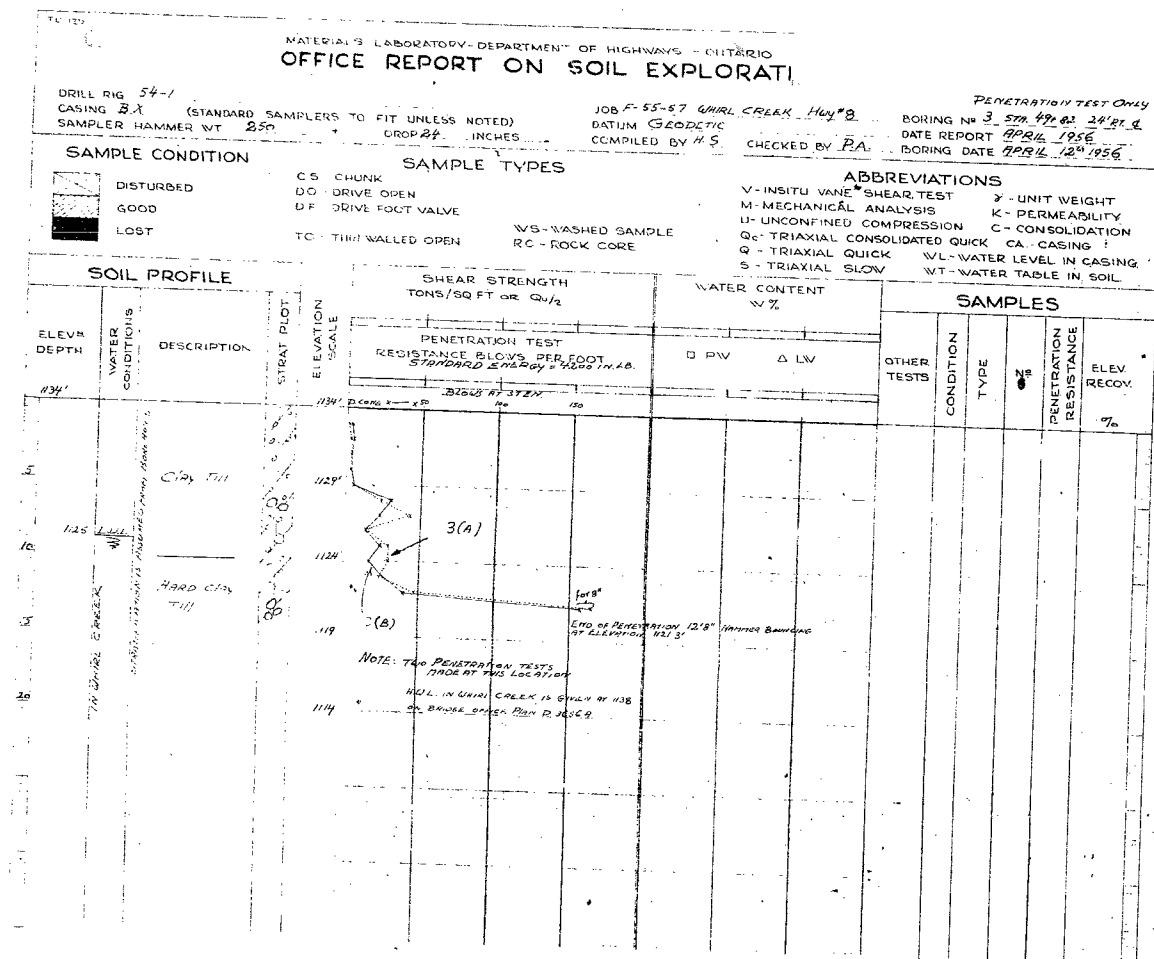
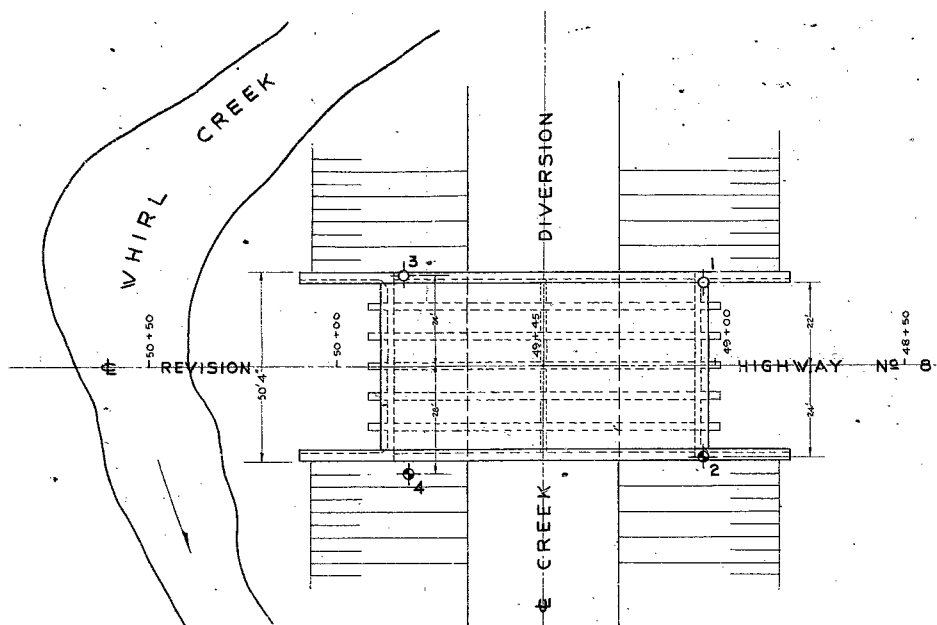


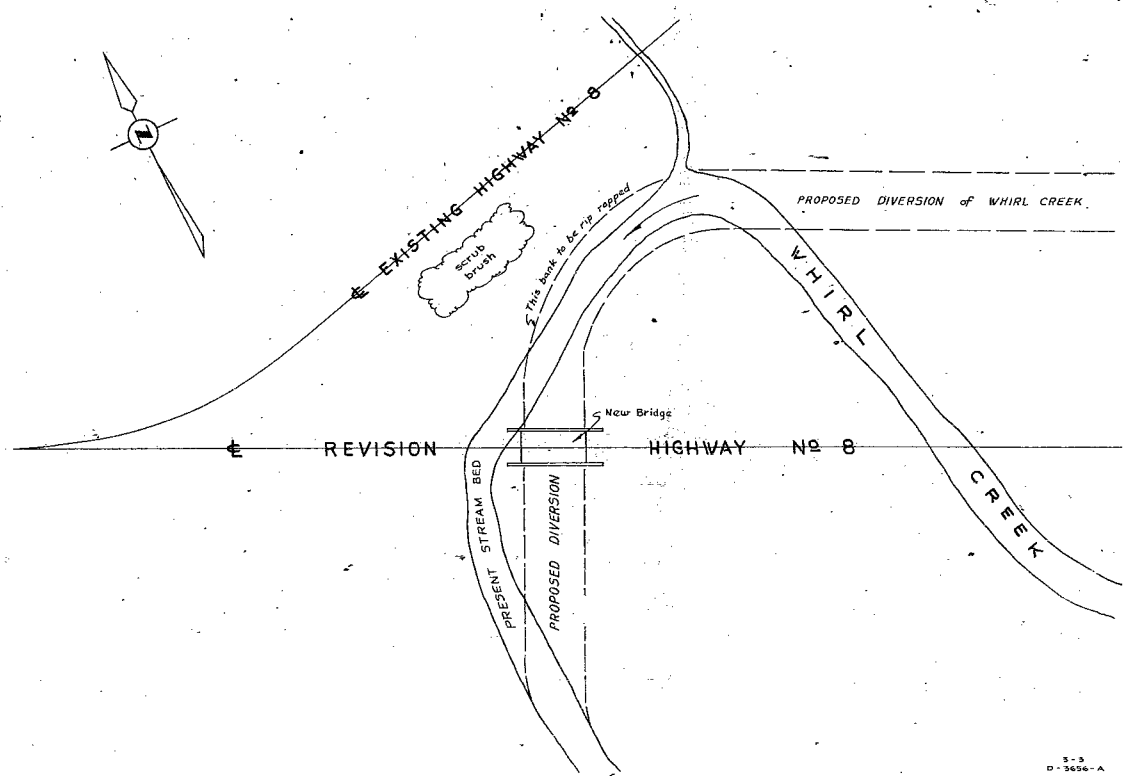
#55-F-57
W.P. # 34-56
Hwy. # 8
WHIRL CREEK
MITCHELL



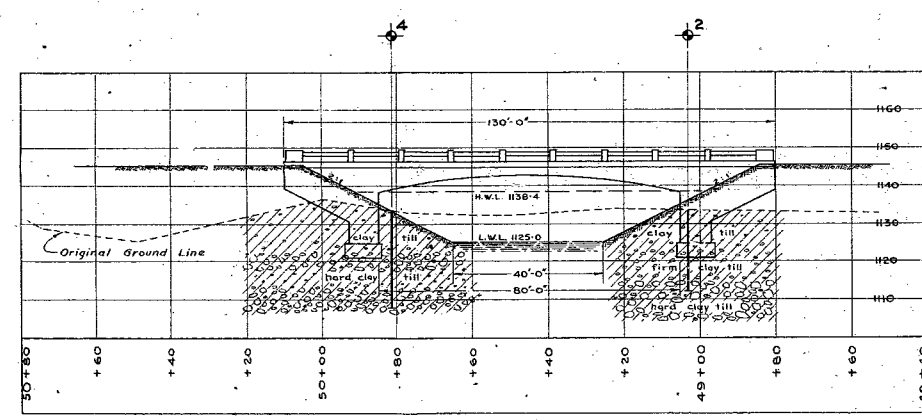




PLAN
Scale - 1 inch = 20 feet



SITE PLAN
Scale - 1 inch = 100 feet



ELEVATION
Scale - 1 inch = 20 feet

LEGEND		
Bore Hole		
Penetration Hole		
Bore & Penetration Hole		
HOLE NO.	ELEVATION	STATION
1	1133.6	49+03
2	1133.6	49+03
3	1134.0	49+82
4	1134.0	49+81

NOTE
The boundaries between soil strata have been established only at bore hole locations. Between bore holes the boundaries are assumed from geological evidence and may be subject to quite considerable error.

PRINT RECORD		
NO.	FOR	DATE

DEPARTMENT OF HIGHWAYS-ONTARIO			
MATERIALS & RESEARCH BRANCH - DOWNSVIEW			
WHIRL CREEK DIVERSION			
PROPOSED CROSSING			
THE KING'S HIGHWAY No. 8 Revision			DIV. No. 3
CO. PERTH			
TWP. LOGAN & FULLARTON		LOT 4 & 14	CON. I
POSITIONS and ELEVATIONS of HOLES			
APPROVED			
ENGINEER		CHIEF ENGINEER	
DESIGN	CHECK	CONTRACT NUMBER	
DRAWING	CHECK	WR 34-56	
TRACING	CHECK	LOADING	
DATE	1 MAY 1956	DRAWING NUMBER	F-55-57 A

REVISIONS	DATE	BY	DESCRIPTION

Mr. A. Toye
Bridge Engineer
F. C. Brownridge
Per: A. Rutka

May 3rd, 1956.
Foundation Report W.P. 34-56
May #5 at Whirl Creek

Attached herewith please find two copies of the
Foundation Report for the above noted structure.

In view of the dense nature of the subsoil spread
footing with bearing values up to 4 tons per square foot
will be satisfactory.

This data was supplied to Mr. Leach's office
verbally on April 24th, 1956.

AR:JA
Encl. 2

F. C. Brownridge
Materials & Research Engineer

Per: *A. Rutka*
(A. Rutka)

C. C. to:

Mr. A. Toye
Mr. H. Tregaskes
Mr. J. Walter
Mr. L. Barrett
Foundations Section ✓
File

FOUNDATION INVESTIGATION FOR
THE
BRIDGE OVER THE WHIRL CREEK
ON
HWY. #8 NEAR MITCHEL

Project F55-57
W.P. 34-56

Bridge Office Plan D3656A
Site Plan E2986-1

Plan 3B168
Profile C1377

Disperament:-

Mr. A. Toye (2)
Bridge Engineer

Mr. H. Tregaskes (1)
Const. Engineer

Mr. J. Walter (1)
Design Engineer

Mr. L. D. Barrett (1)
Dist. Engr., Stratford

Foundation Section (1)

File (1)

INTRODUCTION:

This report covers a foundation investigation for the bridge over the Whirl Creek on the proposed revision of Hwy. #8, 3 miles south east of Mitchel. The proposed work also involves a diversion of the Whirl Creek near the bridge site.

INVESTIGATIONS:

The investigation was carried out by a skid-mounted core drill unit in the period between April 10th, and April 19th 1956. Holes were put down near the corners of the proposed structure. In all 2 boreholes and 6 penetration holes were completed (2 penetration tests were done for each of the holes #3 and #4). The results of the penetration tests and borings are assembled in Appendix I together with a map showing the location of the holes.

SOILS INFORMATION:

The stretch of Hwy. #8 between Stratford and Mitchel is located in part of the Stratford till plain, which is crossed by several till moraines. The till in this area is described as being a fairly uniform brown calcareous silty clay, and seldom very stoney. The drainage of this material is imperfect.

The penetration resistance down to approx. 6'-8' below the surface was low, and a soft brown clay mixed with some small stones was found in the borehole.

The first attempt for a penetration test at hole #1 Sta. 49+03 26' Rt. was stopped at 4½' when the hammer bounced and a boulder, similar to some stones at the surface of the surrounding fields was assumed.

Following are the depths to which the penetration tests

were carried out in the different holes,

Hole #1 down to 12½' stopped with 170 blows for 7".

Hole #2 " " 21' " " 170 " " 7".

Hole #3A " " 12'8" " " 160 " " 8".

Hole #3B " " 12'8" " " 160 " " 8".

Hole #4A " " 10'6" " " 140 " " 6".

Hole #4B " " 13' " " 180 " " 12".

The boreholes at the location of penetrations #2 and #4 were carried out to depths of 20' and 26' respectively. The clay proved too stoney to obtain undisturbed samples with Shelby tubes and several times it was not even possible to get split spoon samples due to this stoneyness, and diamond drilling had to be performed to penetrate the stoney and/or bouldery layers.

ANALYSES OF RESULTS:

1. Below an elevation of 1126 in all holes a very stiff to hard clay till with stone concentrations was found. (At a greater depth this clay till from the split spoon sampler could not even be deformed between the fingers).

2. The stoneyness appeared to increase and the water content decreased with depth.

CONCLUSIONS AND RECOMMENDATIONS:

1. It is recommended that spread footings bearing in the firm clay till be used with a maximum load of 4 tons/square foot.
2. No appreciable settlement is expected under this load.
3. If the footings are brought down to an elevation of 1121 and the side slopes of the Creek under the bridge are left as indicated on Bridge Office drawing D 36-56A (see plan F55-57A in Appendix) and rip-rapped, it is expected that no further protection against scour will be required.

4. (The driving of sheet piling in this stoney till will be hard).

P. Arkema

April 27, 1956.

P. Arkema

APPENDIX I