

Mr. A. L. Lyle

Bridge Engineer

F. C. Brownridge

March 29th, 1956.

U.P. 93-96 Project F 55-50

Foundation Report-Intersection
Bay 27 and Blinn Road

Attached herewith are 2 copies of the above mentioned report.

The site investigation has revealed erratic soils conditions in this locality and for this reason the recommended bearing capacity of 1 1/2 Tons per square foot has been based on the worst conditions found.

No foundation problems are anticipated beneath the approach fills.

F. C. Brownridge
Materials & Research Engineer

Enc.
Encl.



For:

A. L. Lyle
Principal Soils Engineer

C. C. to:

Mr. A. Lyle
Mr. H. W. Wagoner
Mr. J. S. Siler
Mr. F. F. Farnham
Foundations
File

REPORT ON THE SUBSURFACE CONDITIONS
AT THE
INTERSECTION OF HWY. 27 AND DIXON ROAD
IN CONNECTION
WITH
THE PROPOSED OVERPASS

Dispersment:-

Mr. A. Foye (2)
Bridge Engineer
Mr. H. Tregaskes (1)1
Const. Engineer
Mr. J. Walter (1)
Mr. P. Fownes (1)
District Engineer, Toronto
Foundation Section (1)
File (1)

WP 95-56
Project F-55-50

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INTRODUCTION:

The following report is concerned with the soils exploration for a proposed overpass at the intersection of Hwy. 27 and Dixon Road.

The subsurface conditions have been investigated to decide upon the type of foundation and the bearing capacity of the clay. It is advised that spread footings will be suitable using a bearing pressure of $1\frac{1}{2}$ tons per square foot.

PROCEDURE:

The field work was carried out between the 23 and 30th January, and comprised of two boreholes, one for each abutment. The locations of these are shown on the attached plan 55-P-50A and the soils information is recorded under logs of each hole in Appendix I.

SOIL CONDITIONS:

The major soil type encountered was clay. In borehole #1, stiff brown clay with stony layers extended to a depth of 15 feet, below this the clay became more silty and softer to 32.5 feet below ground level where a bed of sand 8 feet thick was encountered. Beneath this sand was hard, grey, bouldery, clay, which was explored for approximately 5 feet.

In borehole #2 only silty clay was recovered to a depth of 37 feet.

WATER CONDITIONS:

No evidence of ground water was found.

ANALYSIS OF TESTING AND RESULTS:

The samples obtained have moisture contents and void ratios typical of stiff glacial clays.

In borehole #1, the average unconfined compressive strength

was found to be 5600 lbs/ft². However in borehole #2 the unconfined compressive strength did not exceed 3000 lbs per square foot within a depth of twenty feet; below this level the strength decreased, note sample #7 taken at 31 feet depth with an unconfined compressive strength of 1300 lbs per square foot. However, this weakness would not limit the bearing capacity of the clay for a foundation depth less than 19 feet.

For the most critical conditions and a factor of safety of 3, a bearing pressure of $1\frac{1}{2}$ tons per square foot is permissible. Stiff glacial clays of this type have a low compressibility and for the above bearing pressure it is unlikely that any appreciable settlement will result.

RECOMMENDATION:

It is therefore recommended that spread footings will be suitable applying a bearing pressure of $1\frac{1}{2}$ tons per square foot.

P. Bernard.

APPENDIX I

#55-F-50
W.P.#95-56
Hwy.#27 &
DIXON RD.
INTERSECTION



MATERIALS LABORATORY - DEPARTMENT OF HIGHWAYS - ONTARIO
 OFFICE REPORT ON SOIL EXPLORATION

 DRILL RIG CORE DRILL W-4 JOB 55-550 DIXON RD INTERCHANGE
 CASING B.A. (STANDARD SAMPLERS TO FIT UNLESS NOTED) BORING NO. 1 STA. 392+53.09
 SAMPLER HAMMER WT. 35.0 DROPPED 24 INCHES DATE REPORT BORING DATE 23 Jan 56
 COMPILED BY H.S. CHECKED BY

SAMPLE CONDITION



SAMPLE TYPES

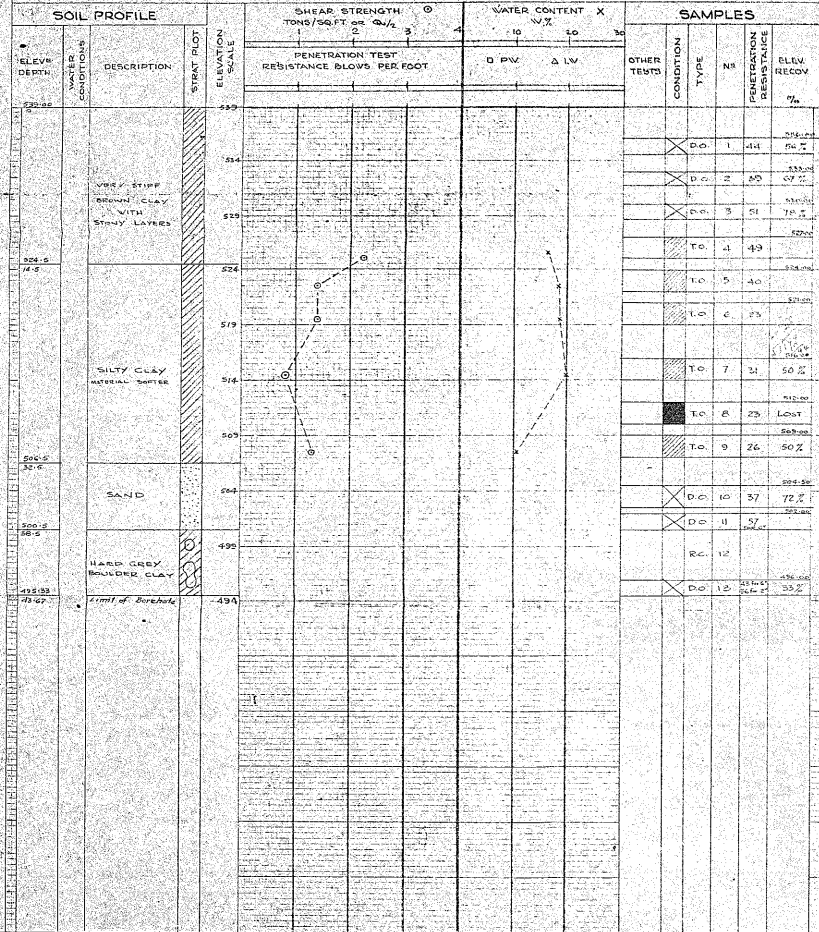
 CS - CHUNK
 DO - DRIVE OPEN
 DF - DRIVE FOOT VALVE
 TO - THIN WALLED OPEN

 WS - WASHED SAMPLE
 RC - ROCK CORE

ABBREVIATIONS

 V - INSITU VANE SHEAR TEST
 M - MECHANICAL ANALYSIS
 U - UNCONFINED COMPRESSION
 Q - TRIAXIAL CONSOLIDATED QUICK
 Q - TRIAXIAL QUICK
 S - TRIAXIAL SLOW
 K - PERMEABILITY
 C - CONSOLIDATION
 CA - CASING
 WL - WATER LEVEL IN CASING
 WT - WATER TABLE IN SOIL

SOIL PROFILE


 MATERIALS LABORATORY - DEPARTMENT OF HIGHWAYS - ONTARIO
 OFFICE REPORT ON SOIL EXPLORATION

 DRILL RIG CORE DRILL W-4 JOB 55-550
 CASING B.A. (STANDARD SAMPLERS TO FIT UNLESS NOTED) BORING NO. 2 STA. 392+53.09
 SAMPLER HAMMER WT. 35.0 DROPPED 24 INCHES DATE REPORT BORING DATE 23 Jan 56
 COMPILED BY H.S. CHECKED BY

SAMPLE CONDITION



SAMPLE TYPES

 CS - CHUNK
 DO - DRIVE OPEN
 DF - DRIVE FOOT VALVE
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