

I N D E X

	Page
INTRODUCTION	1
PROCEDURE	1
SOIL CONDITIONS AND TESTING	1, 2
WATER CONDITIONS	2
ANALYSIS OF RESULTS AND RECOMMENDATIONS	2
CONCLUSION	2

REPORT ON FOUNDATION INVESTIGATION
FOR
CONTROLLED ACCESS HIGHWAY OVER THE
OLD QUEEN ELIZARETH WAY AT BURLINGTON

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INTRODUCTION

A sub-surface investigation was carried out at the site of a proposed bridge over the Q.E. Highway at Burlington Ontario. This bridge when completed will carry the controlled access highway over the old Queen Elizabeth way at Burlington.

PROCEDURE

A mobile cone drill unit was maintained at this site from the 8th of December 1955 to the 5th January 1956 for the purpose of carry out the investigation. During this time four boreholes were carried out, and a number of representative samples sent into and tested in this office.

Considerable difficulty was encountered in obtaining samples in this area because of the type and hardness of the material.

SOIL CONDITIONS AND TESTING

From ground level to about - 10' to - 12' there is a layer of fine to medium sand which is dense to very dense. This sand becomes coarser with increasing depth, and in B.H. 3 a medium gravel was found at the lower edge of the sand.

Below this layer and down to about - 20' to - 25' there is a layer of very stiff to hard clay which has a shear stress of about 4500 lbs/sq.ft.

Rock, soft clay shale, occurs at depths between -30' and -20' in boreholes 3 and 4 and at about -40' in boreholes 1 and 2.

SOIL CONDITION AND TESTING (continued)

In borehole 1 there is a 6' layer of sand very stoney, shaley clay. In borehole # 2 a layer of silty clay again very stoney overlies the bedrock.

WATER CONDITIONS

Water level was measured in boreholes 1 and 3 and was found to be at a depth of about 10'.

ANALYSIS OF RESULTS AND RECOMMENDATIONS

The material at this site will make a satisfactory base for spread footings.

If a rigid frame structure is going to be erected here an allowable bearing value of 5000 lbs/sq.ft. can be used. However a greater allowable bearing capacity could be used for a simply supported structure.

Approach fills for this structure can also be satisfactory founded on this material.

CONCLUSION

A spread footing supporting a rigid frame can develop a bearing capacity of 5000 lbs/sq.ft.

