

~~113-11-2~~

Mr. A. Toye,
Bridge Engineer,
F. C. Brownridge,
Mat. & Research Engineer

October 13, 1955
Re: Foundation Report
Hwy. 43 C.P.R. Crossing Monkland
Bypass, Plan 1 B 389.

Attached hereto is the foundation report for the above noted structure.

The subsoil consists of a very dense bouldery till which can support a high bearing value and therefore spread footings are recommended.

This structure along with the Monkland Bypass was shown on the preparation list of June 15/55 for construction in 1956. The preparation list of ~~June 15~~ 55 does not include either of these.



F. C. Brownridge
Materials and Research Engineer

per:

A.R.

(A. Rutka)

AR/HK.
attach.

Copies to:

Mr. A. Toye - Bridge Engineer (2)
Mr. J. Walter - Design Engineer (1)
Mr. H. Tregaskes - Const. Engineer (1)
Mr. J. Wilkes - District Engineer (1)
Mr. G. Parantatos (1)
File

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REPORT OF FOUNDATION INVESTIGATION

C.P.R. OVERPASS BRIDGE ON

PROPOSED HWY.⁴³ FROM MONKLAND TO ALEXANDRIA

PART PLAN No. 2389

Copies to -

Mr. A. Toye, Bridge Engineer (2)

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Project F-55-6

INTRODUCTION:

A highway has been proposed between Monkland and Alexandria. This highway will cross the C.P.R. Railway and it has been found necessary to build a bridge for the crossing, overpassing the railway.

Subsoil investigation for the bridge site was therefore conducted to discover the characteristic of the soil and to determine the best method of foundation for the bridge structure.

PROCEDURE:

Two boreholes were made during the period 28th July to 9th August, 1955, one on each of the locations of the footings as shown in drawing F-55-6A. Because of the rough features of the land and the obstruction of the wire fence, it was not possible to bring the drilling machine close to the approximate locations of the proposed footings.

The logs of the two boreholes are found in Appendix I.

SOIL STRATIGRAPHY:

According to the two boreholes there exists a continuous layer of sandy-till extending from ground surface to a depth of about 31 ft. with bedrock immediately underlying it.

The sandy-till is very stony, in composition, hard and compact. It was difficult to drive the casing through the stones and diamond drilling had to be used to get through the layer. The recovery of soil from samplings was very poor.

WATER CONDITION:

The water table was found to exist at about 3 ft. to 4½ ft. below the ground surface at the time of exploration.

ANALYSIS OF TESTS RESULTS & DISCUSSIONS:

The sandy-till is excellent material to provide good bearing capacity as evidenced by the large number of blows obtained during the standard penetration tests.

Calculations, based on established formulae for bearing capacity of sandy soil and using minimum value of 75 blows per foot of standard penetration, indicated that the soil can support as high as 15 tons/square foot. This figure already allowed a safety factor of 3.

However, a study of the various Building Codes reveals that despite the high bearing capacity as obtained by calculations, the allowable bearing pressure on such a soil strata should not exceed 4 tons/square foot.

The bottom of the footings ~~are~~ located at elevation 324.2 may prove satisfactory. This should allow excavations to be made above the water table.

CONCLUSION:

The subsoil on the site is good material for spread footing foundation.

For simply supported structure a bearing capacity of 4 tons/square foot could be used.

For rigid framed structure a bearing capacity of 3 tons/square foot is recommended instead.

The bottom of the footing is recommended to be located at elevation 324.2.

There should be no problem regarding the stability of the approach fills as the ground can easily support 40 ft. of fill and much more.

G.N. Farantatos,
Foundation Engineer.

GNF:df

APPENDIX

I

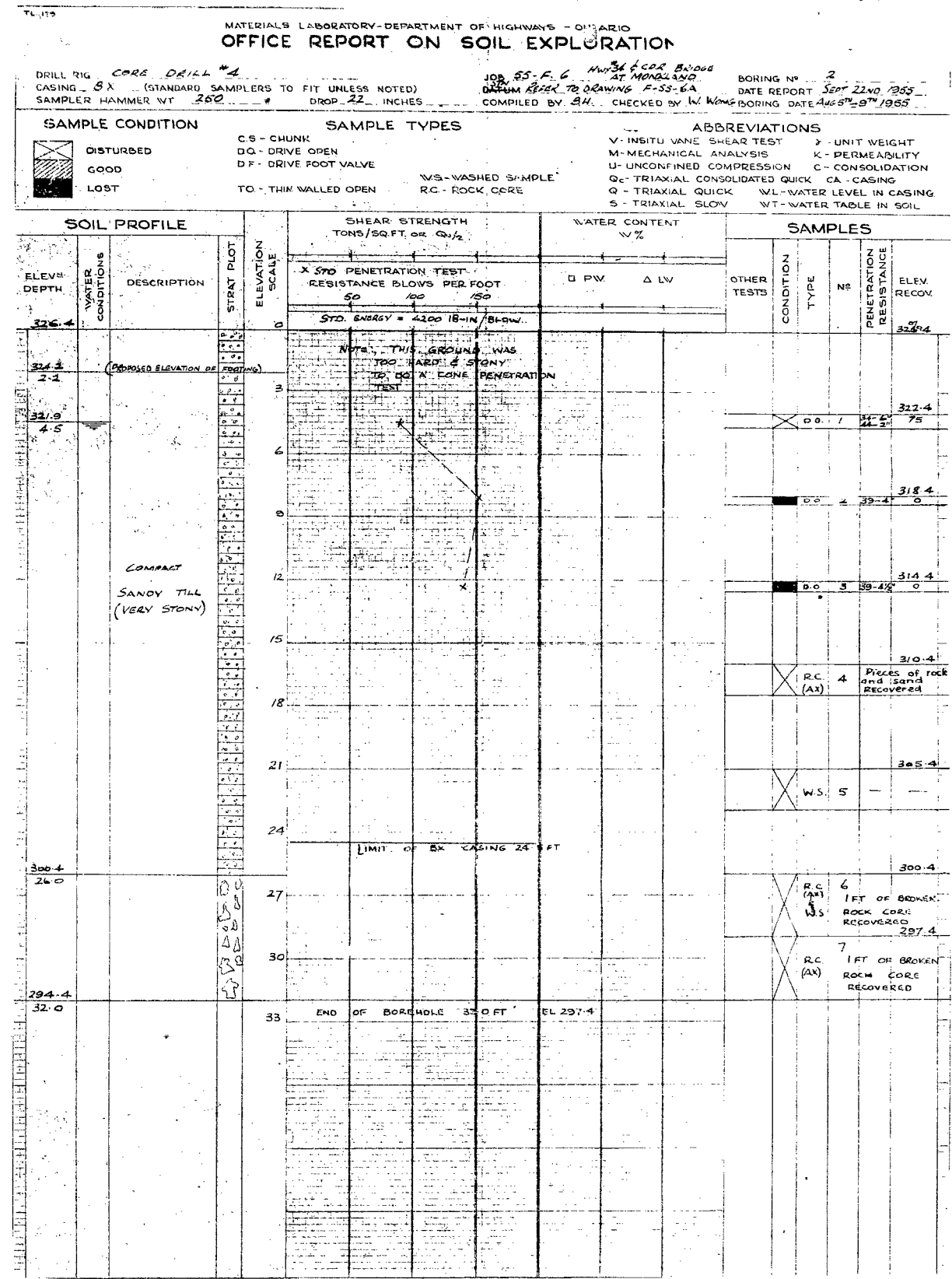
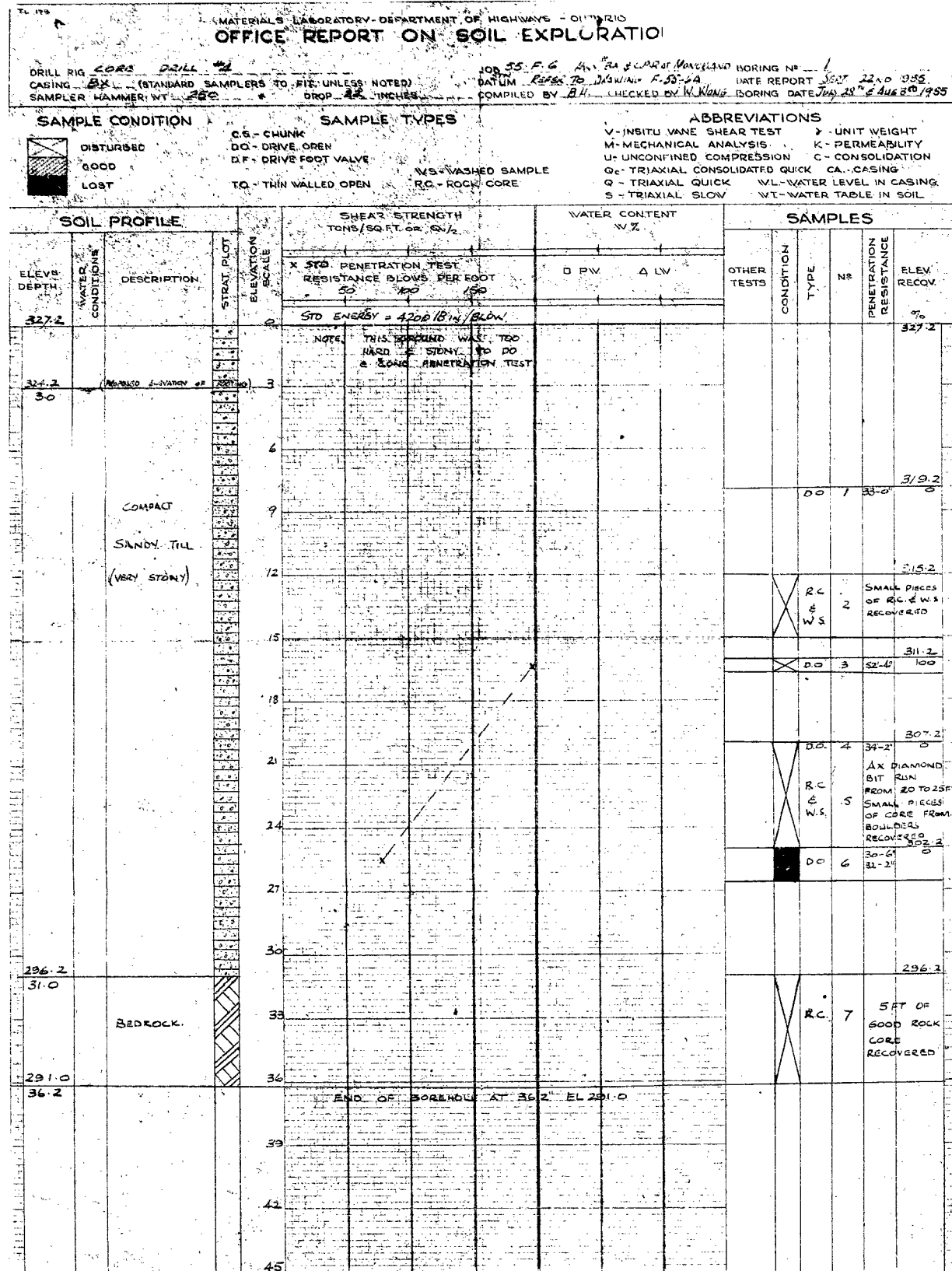
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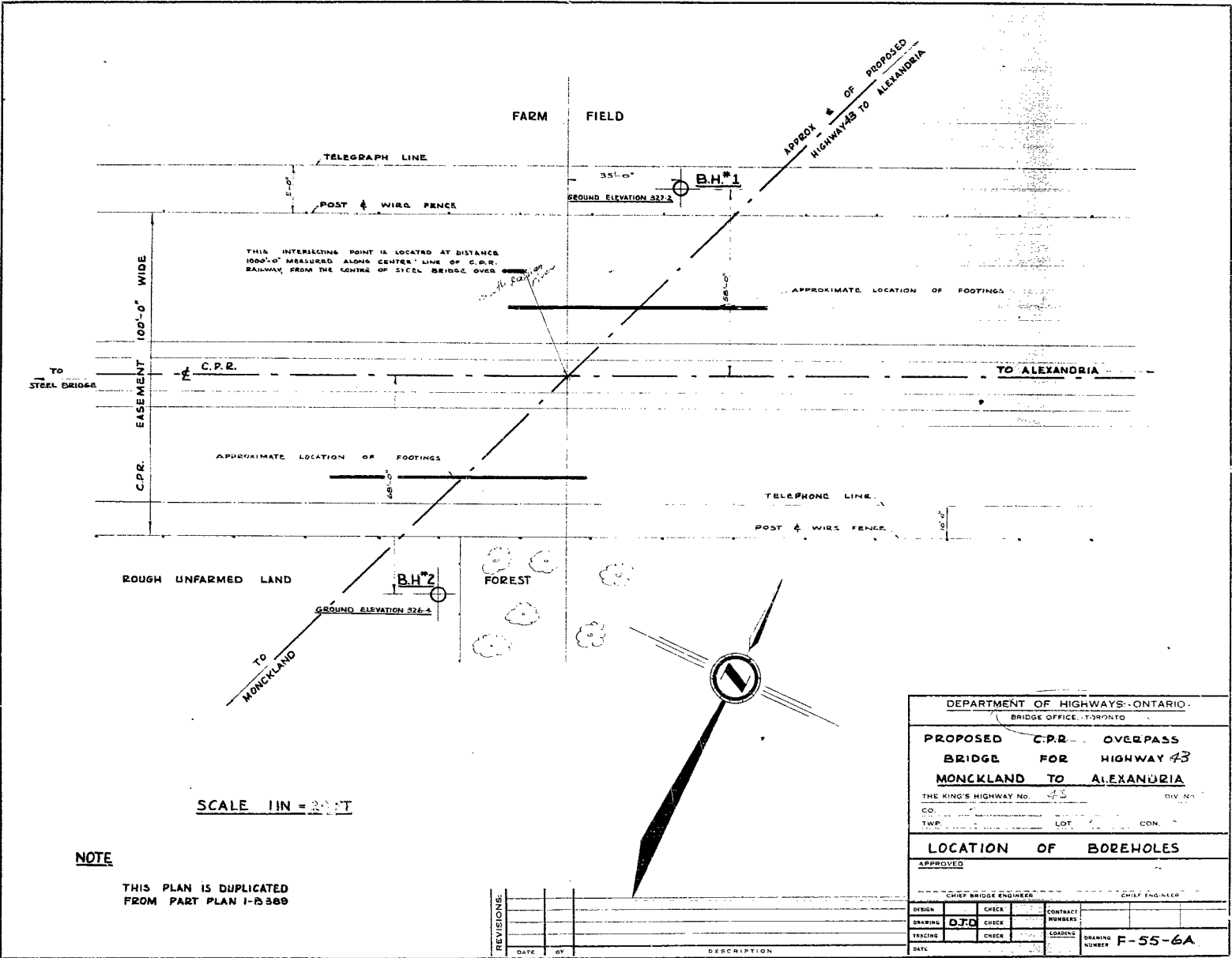
HWY.# 43

MONKLAND TO

ALEXANDRIA

EDITED
FOR MICROFILMING
BY *KT* DATE *2/1/9*





PRINT RECORD		
N.	FOR	DATE

DEPARTMENT OF HIGHWAYS - ONTARIO			
BRIDGE OFFICE - TORONTO			
PROPOSED C.P.R. OVERPASS			
BRIDGE FOR HIGHWAY 43			
MONCKLAND TO ALEXANDRIA			
THE KING'S HIGHWAY NO. 43 DIV. NO.			
CO.			
TWP. LOT. CON.			
LOCATION OF BOREHOLES			
APPROVED			
CHIEF BRIDGE ENGINEER		CHIEF ENGINEER	
DESIGN	CHECK	CONTRACT	NUMBER
DRAWING	D.J.D. CHECK	LOADING	DRAWING
TRACING	CHECK	NUMBER	F-55-6A
DATE	BY	DESCRIPTION	