

Mr A. Trye
Bridge Engineer

Re: Foundation Investigation
Hwy #118 Muskoka River at Bayville

Line B - E-3004-1, 2, 3.
F-372-1

W.P. 76-56

55-F-40

We are forwarding herewith the foundation report
re the above which is self-explanatory. It is recommended
that the west abutment be founded on piles because of the
low unit bearing for spread footings. No problem with the
approach is anticipated.

J. T.
F. C. R.
M. M. R.

Copies to

Mr A. Trye, Bridge Engineer ②

Mr H. Tregaskes Const Eng. ③

" J. Walter Design Eng ①

Mr W. C. Kervier, Asst Eng, Huntsville ②

" G. Parantatos ①

File ①

INTRODUCTION:

The following report is concerned with the investigation for the foundations of the Baysville Bridge over the Muskoka River on the Bracebridge to Baysville road. The exploration was carried out to determine the subsoil conditions and recommend the most suitable foundations.

DESCRIPTION OF SITE:

The proposed crossing is at the southern end of the Lake of Bays, approximately 300 yards upstream from a level control dam. The existing structure consists of two simply supported trusses each 100 ft. span, with a centre pier resting on a rock filled crib.

PROCEDURE:

The field work was carried out between Nov. 9th and 17th, consisting of two boreholes and 13 jet soundings in the river to determine the profile of the bedrock.

The boring information appears in Appendix I under logs of each hole and the soundings are shown on the attached plan No. 55-F-40A, together with their locations.

SOIL CONDITIONS:

Boreholes 1 and 2 located on the west bank showed up to 35'-8" of sand over lying bedrock; this stratum diminished towards the approximate centre of the river, beyond which bedrock was clearly visible, in the water, and on the east bank lay under about 2 ft. of cultivated soil.

The sand in boreholes 1 and 2 was found to be of medium density having a standard penetration resistance of between 17 and 30 blows per foot.

WATER CONDITION:

The ground water in the boreholes was at the same elevation as the river water level that is approximately 8 feet below ground level.

ANALYSIS OF RESULTS AND RECOMMENDATIONS:

For the foundations of river piers and the east abutment, spread footings dowelled to bedrock can be used. However, for the west abutment if the criterion is taken as 1" settlement then the allowable load for spread footings 6 ft. in breadth is $1\frac{1}{2}$ tons per square foot, determined from Terzaghi's studies graph.

It is therefore, recommended that a pile foundation be used for the west abutment; these should be end bearing on the bedrock and approximately 25 feet long. Either timber or H section steel piles are suitable and the choice between the two should be made according to the economic considerations.

RECOMMENDATIONS:

The foundation for the river piers and east abutment may be of the spread type dowelled into the bedrock. In the other hand for the west abutment it should be constructed upon end bearing wooden piles 25' 0" long.

If timber piles are used the end should be reinforced by a steel shoe of suitable design.

G. N. Parantatos,
Foundation Engineer.

A REPORT
ON THE FOUNDATION INVESTIGATION
FOR THE
BAYSVILLE BRIDGE ON THE
A LORNBIDGE TO BAYSVILLE ROAD.

Copies to:

Mr. A. Tote, Bridge Engineer (2)
Mr. H. Tregaskes, Const. Engineer (1)
Mr. J. Walter, Design Engineer (1)
Mr. H. C. Dernier, Huntsville Dist. (1)
Dist. Engineer.
Mr. G. Farantatos (1)
File (1)

LINE B

E 3004 -1,2,3.
F 3714 -1

Project 55-P-40

#55-F-40

Hwy. #118

MUSKOKA RIVER

BAYSVILLE

EDITED
FOR MICROFILMING
BY *M.D.* DATE *2/7/10*

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

DRILL RIG CORE DRILL #2
CASING BOX (STANDARD SAMPLERS TO FIT UNLESS NOTED)
SAMPLER HAMMER WT 250 # DROP 24" INCHES

JOB 55-F-40 BAYSVILLE BRIDGE BORING NO. 1
 DATUM 1042.63 STA 25+75.6 DATE REPORT _____
 COMPILED BY RB CHECKED BY _____ BORING DATE 9-10 NOV '55

SAMPLE CONDITION

DISTURBED
GOOD
LOST

SAMPLE TYPES

C.S - CHUNK
DQ - DRIVE OPEN
DF - DRIVE FOOT VALVE
TO - THIN WALLED OPEN

W.S. - WASHED SAMPLE
R.C. - ROCK CORE

ABBREVIATIONS

ABBREVIATIONS

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

SAMPLES

SOIL PROFILE

[illegible]

OFFICE REPORT ON SOIL EXPLORATION

DRILL RIG _____ CORE _____ DRILL #2 _____
CASING _____ DB _____ (STANDARD SAMPLERS TO FIT UNLESS NOTED)
SAMPLER HAMMER WT _____ 250 _____ # _____ DROP 24 _____ INCHES

JOB 55-F-40 BAYSVILLE BRIDGE
 DATUM 1041.88 234.80 27' LT BORING No. 2
 COMPILED BY PJS CHECKED BY DATE REPORT
 BORING DATE 11 NOV 55

SAMPLE CONDITION



DISTURBED
GOOD
LOST

SAMPLE TYPES

C.S - CHUNK
D.O. - DRIVE OPEN
D.F - DRIVE FOOT VALVE
T.O. - THIN WALLED OPEN

W.S. - WASHED SAMPLE
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SAMPLES

[illegible]

