

## MEMORANDUM

To: Mr. A. Stermac  
Principal Foundation Eng.,  
Materials & Research Section,

FROM: G.C.E. Burkhardt,

DATE: October 24, 1962.

OUR FILE REF. #BA1515

IN REPLY TO

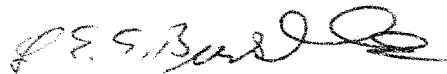
SUBJECT: County of Carleton,  
Proposed Bridge Widening,  
Twp of Marlborough,  
Lot 6,7 Con V.

62-F-257M

Attached please find one copy of the Foundation Report by John D. Patterson, and one copy of the Final Plan for your comments.

We intend to approve the plan before November 9, 1962 and would appreciate it very much, if we could have your comments within the next two weeks.

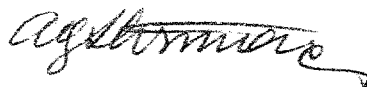
GCEB/dm

  
G.C.E. Burkhardt,  
for K.L. Kleinsteinber,  
Municipal Bridge Liaison Engineer.

No comment

By phone to G.C.E. B.

Oct 25, 1962



BA 1515

JOHN D. PATERSON, B.Sc., P.Eng.

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LABORATORY TESTING  
APPRAISALS, RESEARCH  
SOIL INVESTIGATIONS

62-F-257M

REPORT OF SOIL INVESTIGATION

PROPOSED BRIDGE WIDENING

STEVEN CREEK

COUNTY ROAD NO. 16

MARLBOROUGH TOWNSHIP

FOR

COUNTY OF CARLETON

REPORT NO. S 267 - 62

OTTAWA, MAY 28, 1962



## Introduction:

At the request of Mr. A. J. Graham, P. Eng., on behalf of the County of Carleton a soil investigation was conducted at the site of a narrow bridge over Steven Creek on County Road 16, Lots 6 and 7, Concession 5, Township of Marlborough.

It is proposed to widen the existing bridge equally on both sides.

## Fieldwork Procedure:

Two test holes were put down on diagonally opposite sides of the existing bridge as close as possible to the existing abutments.

At each location a cone probe was driven to refusal to check the uniformity of the soils. At Hole 1 casing was driven, the soils sampled, and bedrock located and drilled.

The firm of F. E. Johnston Drilling Co., Ltd. was employed for all drilling operations. Their work was supervised at all times by a member of our staff. The equipment used consisted of a standard drilling rig fully equipped for soils testing and mounted on a trailer.

## Sampling and Testing:

Except for topsoil and clay near the surface, the soils encountered were granular. Samples were recovered by means of the split spoon sampler and were retained in plastic bags. With each sample taken the standard penetration test was conducted and the results are recorded as "N" values.

A core sample of bedrock was recovered by diamond drilling, classified and retained in a core box.

## Observations:

### (a) Soil Types.

In Hole 1 the following soil profile occurs:

0	- 1'	Topsoil.
1'	- 2'	Weathered silty clay with some sand.
2'	- 3'	Dense weathered glacial till.
3'	- 7.5'	Dense glacial till.
7.5'	- 12.4'	Very dense glacial till.
12.4'	- 19.0'	Bedrock - dense limestone overlain by porous sandy dolomite, with minor mineralization.

An interpretation of the soil profile at Hole 2 based on cone blows per foot is given on the Soil Profile Sheet. At this location the till varies in density.

(b) Groundwater: .....

(b) Groundwater:

At the completion of Hole 1 water continued to flow from the hole under artesian pressure. The rate of flow, however, was less than 1 gal./minute. It is believed that this water flows from the porous dolomite. The groundwater level at Hole 2 was 7 feet below ground surface.

Conclusions and Recommendations:

The dense glacial till at Elevation 90 on the south bank and at Elevation 87 on the north bank is suitable material on which to place spread footings for the widened abutments. The recommended maximum soil loading at these depths is 4000 pounds per square foot on undisturbed till.

Care should be taken to ensure that water from the creek is kept out of the excavations prior to the placing of concrete.

The depth of the footings of the existing bridge is not known and there may be a difference between our recommended depth and the present footing depth.

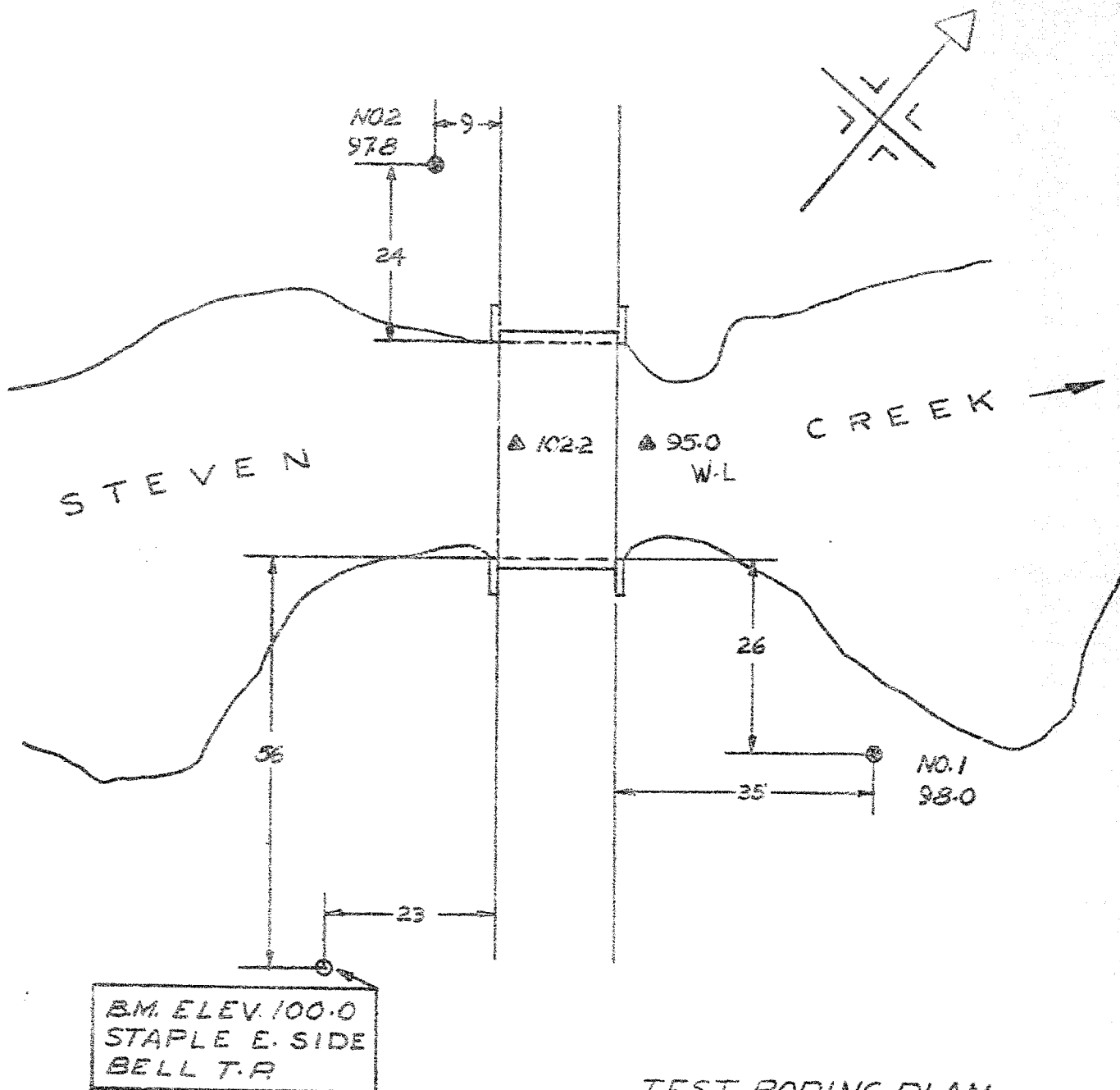
If, after excavation, it is found that there is a difference some re-evaluation of the soil conditions may be necessary.



J. D. Paterson, P. Eng.

Ottawa, May 28th, 1962.

JDP/MMC.



TEST BORING PLAN  
PROPOSED  
BRIDGE WIDENING  
COUNTY RD 16  
LOT 6 & 7 CON. 5  
TWP. of MARLBOROUGH

SCALE 1"=20'

MAY 1962

Location: County Road No. 16,  
Township of Marlborough.

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Township of Marlborough.

Hole No:  
1 and 2.

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COUNTY ROAD #16

STEVEN CREEK

LOT 6,7 CON. 5

