

DEPARTMENT OF HIGHWAYS ONTARIO

MEMORANDUM

TO: Mr. F. C. Brown,
District Engineer,
District #1,
CHATHAM, Ont.

FROM: Foundation Section,
Materials & Testing Office,
Room 107, Lab. Bldg.

ATTENTION: Mr. W. Katarynczuk,
Maintenance Engineer.

DATE: May 7, 1971

OUR FILE REF.

IN REPLY TO

GEOCRES No 40 I12-25

SUBJECT:

Tecumseh Park Bank Slippage near Hwy. #2 -
Approximately 2.0 Miles East of Thamesville
District #1 (Chatham)

In response to a request from the District, an inspection of the river banks of the above mentioned site was made by the writer and Mr. W. Katarynczuk, Maintenance Engineer, on April 9, 1970. Observations made at the site are as follows:

The subsoil in the river banks mainly consists of a deposit of silty fine sand to silt. Numerous spring water systems can be observed on the side slopes of the banks within the upper 15 feet. At many locations a considerable amount of water was emerging from these springs. This has resulted in appreciable amounts of fine-grained soil particles being washed out and accumulating at the toe of the river banks. Due to the action of seepage forces through the slopes, erosion by surface water run-off, and frost-thaw cycles in fine-grained granular materials, progressive failures of the river banks have taken place during the past several years. In order to prevent such progressive failures, blanketing side slopes of the river banks with suitable granular material will be necessary. In addition, an adequate drainage system with perforated sub-drains is essential to collect all seepage from the springs within the river banks. If these measures are not carried out, further slippage of river banks can be anticipated. The remedial measures, in general, were discussed with Mr. W. Katarynczuk at the site, and it was agreed to confirm this in a memo after the cross-sections of the slippage area were submitted to the Foundation Section by the District.

Subsequently, this Section received a teletype from the District, stating that we should submit our memo only after reviewing the report by the Lower Thamesville Conservation Authority, which will be released by January, 1971. This Section is now in possession of this report, and it also confirms our assessment of the failure of the river banks near Thamesville. The report states that the main reason for bank failure is due to the high pore pressures developed in the granular subsoil due to the presence of springs. Our recommended remedial measures are summarized as follows:

Mr. F. C. Brown,
District Engineer - Chatham
Attn: Mr. W. Katarynczuk, Maint. Engr.

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May 7, 1971

Re: Tecumseh Park Bank Slippage near Hwy. #2 -
Approx. 2.0 Mi. East of Thamesville

- Recommended Corrective Procedures:

i) All the loosened material in the affected area on the river banks should be removed.

ii) Random rip-rap of at least 24 inches in thickness should be dumped at the toe of the river bank up to N.W.L. (Normal water level).

iii) Positive drainage measures should be adopted to relieve pore pressure buildup due to the spring water system in the upper 10 to 15 ft. of the river bank material. This can be achieved by means of an 8" ϕ perforated sub-drain, as shown on the enclosed drawing. The sub-drain should have a minimum cover of at least 4 ft. for frost protection. It is essential to provide outlets for the sub-drain and these outlet pipes must be prevented from freezing.

iv) A granular blanket, consisting of a free-draining material, such as Granular 'A', should be placed on the slope, as shown on the enclosed drawing. The blanket should have a minimum thickness of at least 12 inches.

v) Place additional rip-rap on top of the granular blanket above the normal water level and up to high water level of the river.

We would appreciate it if you would keep us advised as to the future course of events in this matter. If you have any further queries, or if any of the foregoing requires clarification, please feel free to call us.

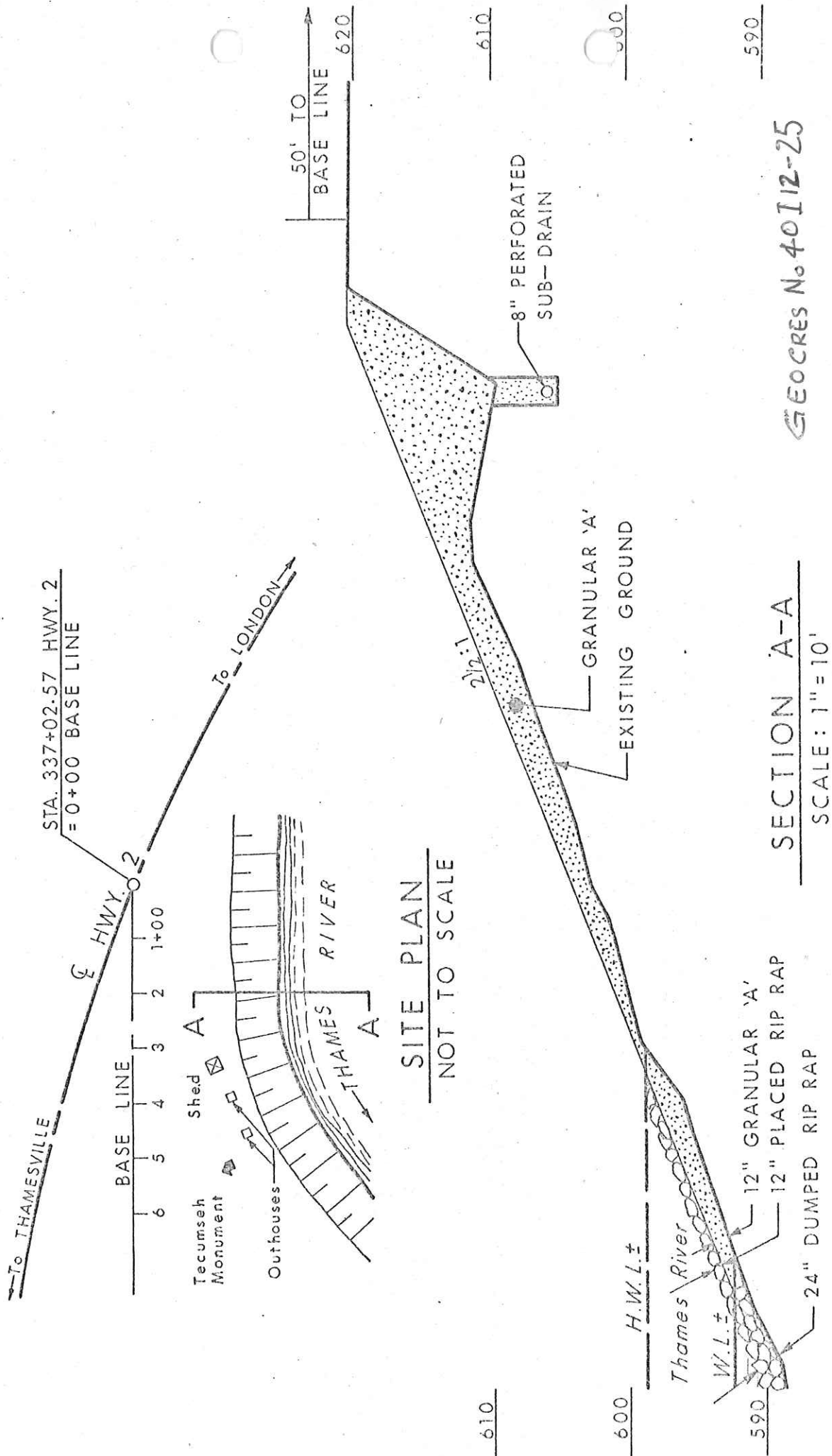
MD/MdeF
Encl.

cc: Mr. J. Roy

Foundations Files ✓
Gen. Files



M. Devata
SUPERVISING FOUNDATION ENGR.
For:
A. G. Stermac
PRINCIPAL FOUNDATION ENGR.



SUGGESTED REMEDIAL MEASURES
 TECUMSEH PARK BANK SLIPPAGE-THAMES RIVER
 HWY. 2 APPROX. 2 MILES EAST OF THAMESVILLE

MEMORANDUM

To: Mr. A. G. Stermac
Foundations Engineer
Downsview

FROM: District 1, Chatham

ATTENTION: Mr. M. Devata

DATE: June 15, 1970

OUR FILE REF.

IN REPLY TO

SUBJECT: Tecumseh Park Bank Slippage, Hwy 2, Approximately 2 miles
East of Thamesville - - - - -

Further to our meeting of April 9, 1970 we have taken cross-sections of the banks where severe slippage has occurred at the above noted site and are forwarding same for your information and necessary action.

A report was prepared by the Lower Thames Valley Conservation Authority regarding bank slippage along the Thames River and they have indicated that "bank failure" was attributed to shear more so than erosion. Their findings may assist you in evaluating the problem with which we are faced at our Tecumseh Park Site.

Could you please give us your recommendations for treatment to prohibit further bank erosion.

WK/mm
Encl.

W. Katarynczuk
W. Katarynczuk
Maintenance Engineer
for
E. C. Brown
District Engineer

*(Brown) Lower
important
for: M. Devata*