

G.I.-30 SEPT. 1976

GEOCRES No. \_\_\_\_\_

DIST. 31 REGION \_\_\_\_\_

W.P. No. \_\_\_\_\_

CONT. No. \_\_\_\_\_

W. O. No. 96-11007

STR. SITE No. \_\_\_\_\_

HWY. No. 3LOCATION Hwy 3 WBL - Slope  
FailureNo. of PAGES - (400m W of Hwy 19)=====  
OVERSIZE DRAWINGS TO BE INCLUDED WITH THIS REPORT. \_\_\_\_\_REMARKS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# MEMORANDUM

## Engineering Materials Office

Room 313, Central Building, Downsview

Tel. (416) 235-3732 Fax. (416) 235-5240

To: Ron Meertens  
Engineering Services Officer  
District 31, London/Stratford

Date: June 2, 1997

From: Pavements and Foundations Section  
Room 315, Central Building

Re: Embankment Instability on Highway 3 West-Bound Lane  
400 m West of Highway 19; W. O. 96 - 11007  
Highway 3, District 31, London/Stratford

Further to our site visit and the meeting we had on May 27, 1997. The following suggestions are made to improve the drainage at this location.

1. The drainage ditch on the south side of Hwy. 3 should be graded properly to provide a positive drainage to avoid any seepage through the fill.
2. Rip - rap or rock lining should be placed at the bottom of the chute located on the south side of Hwy. 3 to prevent further erosion or undermining of the slope. The rock lining should be extended to a minimum of three meters on both sides of the chute.
3. The seepage water at the toe of the slope on the north side should be intercepted by placing a 150- mm diameter perforated pipe, wrapped in geotextile and covered with clear stone and Granular 'A'. The pipe shall be placed in a 600- mm deep trench along the toe of the slope where seepage is occurring and directed to provide a positive drainage.
4. Three meters wide berm was recommended in our memorandum dated October 2, 1996. This may be constructed with rockfill after draining the seepage water away from the fill already in place.

As we discussed during our meeting, Geotechnical Section of Southwestern Region will provide the necessary details for the execution of the work. If you need more information or have any question, please contact this office.

c. c Nick. Gilbert

A handwritten signature in black ink, appearing to read 'M. Vasavithasan'.

M. Vasavithasan, P. Eng  
Foundation Engineer

For  
Tae C. Kim, P.Eng.  
Sr. Foundation Engineer

# MEMORANDUM



To: Ron Meertens  
Engineering Services Officer  
District 31, London/Stratford

Date: October 2, 19996

From: Pavements & Foundations Section  
Room 315, Central Building

Tel: 235-3731  
Fax: 235-5240

Re: Slope Failure on Highway 3 West-bound Lane  
400 m West of Highway 19  
W.O. 96-11007, District 31, London/Stratford

The cross-sections forwarded to us indicate that the existing slope from Sta. 10 + 000 to Sta. 10 + 015.3 is slightly steeper than 2 horizontal to 1 vertical and also, the failure is centred around Sta. 10 + 009. The following remedial measures are suggested to stabilize the slope:

- 1) Clean the drainage ditch on the south side of Highway 3 and provide a positive drainage to avoid any water seepage through the fill.
- 2) Remove all the loose and soft material in the unstable area and rebuild the slope with granular material.
- 3) Provide a 3 m wide berm at an elevation of 87.0.

The benching for the restoration work shall be in accordance with OPSD 208.01. Pertinent MTO and OPS specifications and standards shall be used to ensure the integrity and future performance of the embankment.

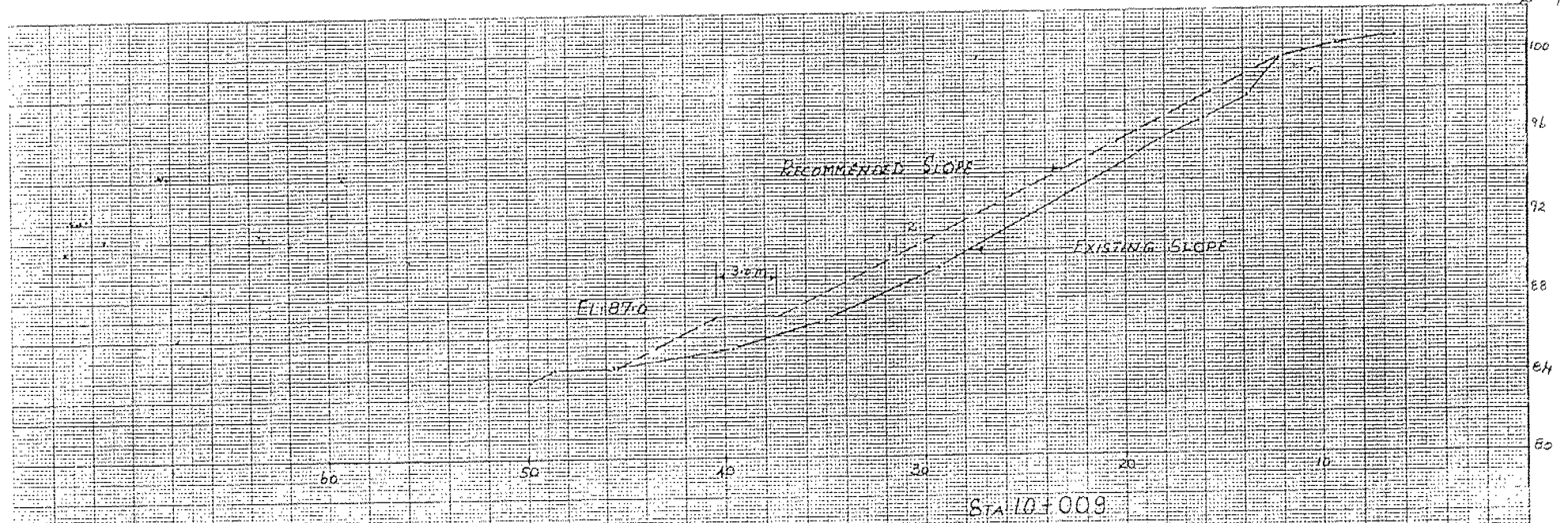
A handwritten signature in cursive script, appearing to read "M. Vasavithasan".

M. Vasavithasan, P. Eng.  
Foundation Engineer  
for

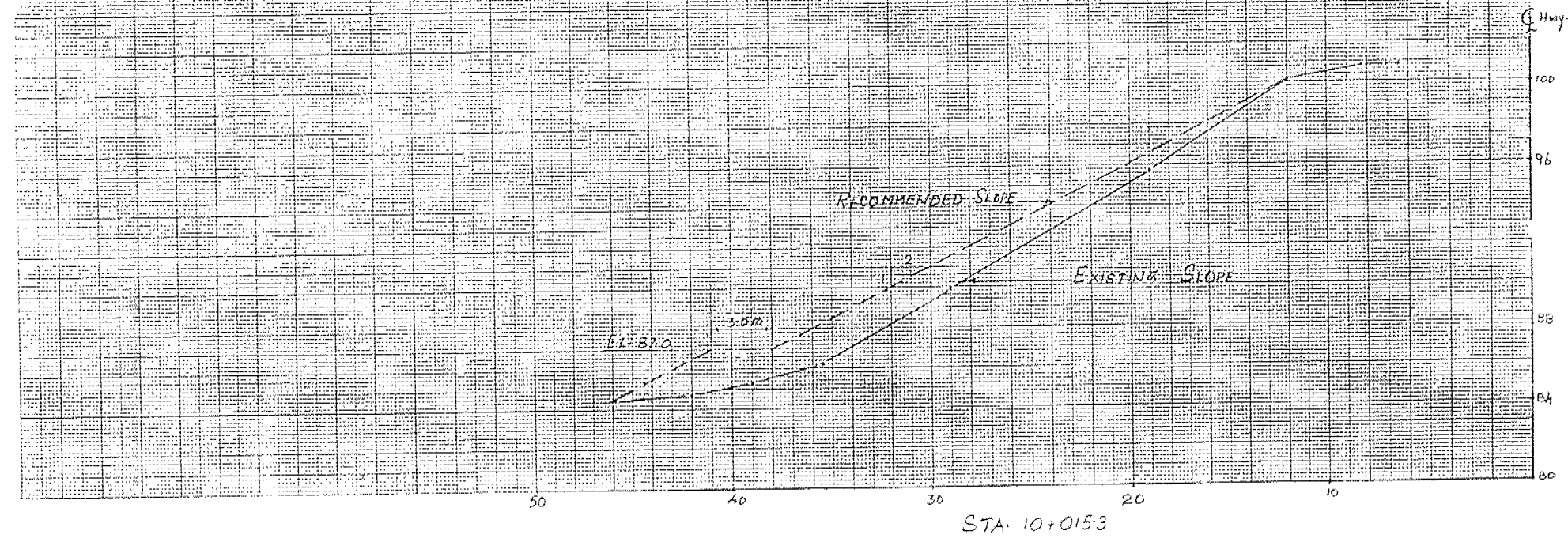
Tae C. Kim, P. Eng.  
Sr. Foundation Engineer

MV/mmj

Q Hwy 3



Q Hwy 3



### Minutes of Meeting

A site meeting was held on September 04, 1996 to discuss the restoration work on Highway 3, 250 m west of Highway 3 and Highway 19 intersection

In attendance were:

Ron Meertens, Engineering Services Officer, District 31

Tae C. Kim, Sr. Foundation Engineer, Pavements & Foundations

Mark Vasavithasan, Foundation Engineer, Pavements & Foundations

Comments and conclusions made at the meeting are as follows:

- 1) Ron Meertens briefly described the details of the failure and the type of material around the failure location.
- 2) Mark and Tae advised to clean the drainage ditch on the south side of Highway 19 and provide a positive drainage outlet to avoid any water seepage through the fill.
- 3) Tae advised to direct the surface run-off on the north shoulder of Highway 3 to avoid any flow or run-off through the failed area.
- 4) Tae and Mark recommended to remove all loose and soft material in the failed area and rebuild it with granular material, and advised to provide a 3 m wide toe berm with 2H:1V side slope.

It was agreed that the final recommendation for the north slope will be provided when the cross-sections are made available to the Pavements & Foundations Section.

Please advise the undersigned of any error or omission.

Prepared by



M. Vasavithasan  
Foundation Engineer

c.c. - All Present